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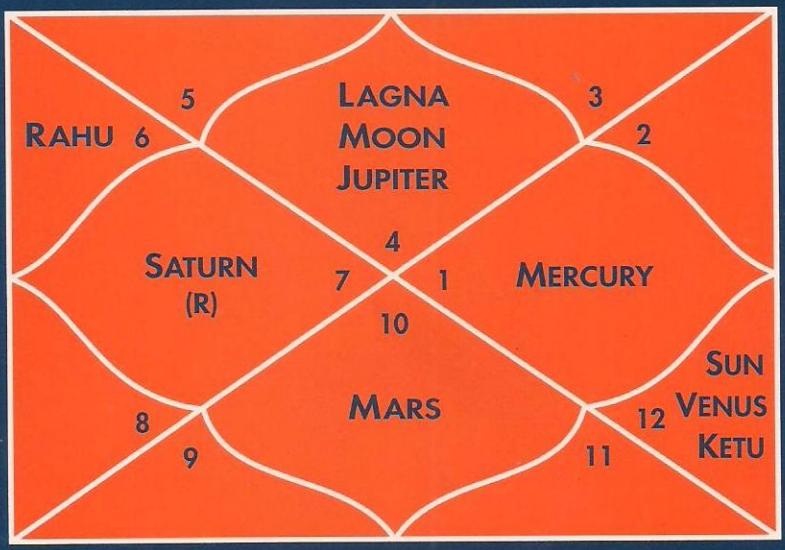

Deepak Kapoor

Revised Enlarged Edition

Vedic Astrology Series

ASTRONOMY AND MATHEMATICAL ASTROLOGY

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Astronomy and Mathematical Astrology

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To

Vinita
Deepti & Vivek
for their love and patience
without which this would not have been possible

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★ To Ms. Mohna, Jyotishacharya, for her contibution towards chapters on Graha Bala and Bhava Bala.

CONTENTS

PREFACE

Mr K N Rao, the guiding force of astrology classes at Bharatiya Vidya Bhawan New Delhi has been a constant source of inspiration. This encouragement has eventually resulted in writing of **Astronomy and Mathematical Astrology.**

This book is primarily meant for those who want to learn the techniques of casting a horoscope and divisional charts with clear perception, systematically and scientifically. Each step has been explained logically and the subject dealt in simple and lucid narration.

The first few chapters briefly explain those concepts of astronomy which are relevant to astrology. The subsequent chapters gradually lead to casting of horoscope both by modern & traditional methods. It is a complete text book on astronomy and mathematical astrology covering Vimshottari Dasha, Bhavas, Upgrahas, Panchang calculation, Graha bala, Bhava bala and Divisional charts etc. A chapter on the brief history of astronomy in India has been added.

This book will also serve as a handy reference material required for astrological calculations.

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FOREWORD

Two groups of astrologers have always existed, the traditionally trained ones who did astrology as a source of living and felt it necessary to keep whatever family secrets they had been having for generations. That knowledge expands when it is shared, discussed, debated and taught has been an Indian tradition. Yet the traditional astrologers did not accept this. The other group of astrologers have been pure amateurs who picked up their knowledge from whatever books have been available in the market. Their interest and awareness of the astrological traditions has kept alive respect for the occult in so many places.

Till we started our astrology courses at Bharatiya Vidya Bhawan, New Delhi in 1987 with those whom I taught mostly and trained up, there existed no academic group of astologers in India. Our students coming with rich intellectual, technical and medical background had already with them the habit of studying a subject with a disciplined mind. In course of time, some of them developed their astrological skill theoretically and for predictive purposes so well that they surpassed most of their teachers who stagnated and produced no research.

Now with the brilliant faculty of younger teachers on the astrological faculty of Bharatiya Vidya Bhawan, it has been possible to produce systematically, researches and text books. It is for this reason that India's best astrological books are now being written by these teachers whose zest for knowledge is our best promise for the astrological renaissance we are witnessing. In USA they have acclaimed these books as the best ever to have from India. Americans like scientific and clear explanations. When they like a book, they say so candidly.

Fifteen books have already been written by the members of faculty. But no teacher is to rest on his laurels and turn this

academy of astrology into a *madarsa or a pathshala* or a primary school of astrology. That will lead us to higher efforts.

One result of such higher effort is this excellent book by Deepak Kapoor whose concepts, teaching methods and clarity of thinking is well reflected in the book. It is organized systematically, planned properly, written lucidly.

It is the text book for all those who want to have clear ideas of that essential part of astronomy and mathematical astrology without which astrologers can get trapped into confusions. In our scheme such a book was primarily necessary. We are grateful to Deepak Kapoor whose book will be a life companion for all astrologers of all levels, the advanced ones who need to refresh their knowledge and the beginners who need to know astronomy related to astrology and how to cast a horoscope and divisional charts.

The main aim of writing this book is to make available to students of astrology the kernel and substance of astronomical concepts which astrologers need to know and must know. This is also a text book of mathematical astrology which not only explains lucidly the method of casting a horoscope and divisional charts, but also explains the logic of doing so at each step. This book will also prove to be an excellent reference material for astrologers, the amateur and the expert alike.

This book will undergo revisions in the course of next few years as and when necessary. In itself it is a complete guide to astronomy and mathematical astrology. Yet our future students may want more information or more elaboration of the material already given in the book. During my course of teaching astrology both in India and USA I have realized that no teacher can presume that he has covered the entire ground as he had wanted to. Some of the well equipped students ask questions which become good hints for future elaboration of the subjects discussed and to be discussed. This is what the writer must keep in his mind.

Deepak Kapoor has risen to the occasion and produced this excellent book.

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K.N. Rao

10-79 1st sem

CHAPTER I

INTRODUCTION

"Independent of the world, ever contented, and renouncing all attachment to action as well as its fruits, such a man is free from action even while he is engaged in it"

- Bhagwad Gita, IV. 20.

Astrology is one of the oldest sciences mankind has known. It is a Vedanga which means one of the branches, parts or components of the Vedas, which helps in understanding of the Veda mantras. The vedangas are divided into six categories that is why astrology is described as one of the shadangas meaning one of the six parts. A student of astrology should know what these six parts are. They are Shiksha, Kalpa, Nirukta, Chhanda, Vyakarana and Jyotisha. A study of all these was compulsory and considered essential before a disciple was initiated into the Vedas leading to gaining of knowledge both for worldly and material duties, and finally for the attainment of emancipation or moksha. These six parts are:

1. *Shiksha*: The knowledge of the rules of pronunciation.
2. *Kalpa*: The procedure for performing religious rituals and duties.
3. *Nirukta*: The famous treatise written by Muni Yask on etymology or the exposition of Vedic words.
4. *Chhanda*: The study of Vedic metres, rhythm, pause, tempo, stress and pitch features of a language.
5. *Vyakarana*: The Vedic grammar which lays down rules for forming words and combining them into sentences.

6. *Jyotisha* : The study of the movement and position of constellations and planets called **Ganita jyotisha** (Mathematical astrology), and their effects on animate as well as inanimate beings, called **Phalita jyotisha** (Predictive astrology).

The Vedas were related to the cosmic body (Kalapurusha) with jyotisha being its "eyes" as eyes alone perform the duty of seeing everything. Jyotisha is further divided into three skandas namely Ganita, Samhita & Hora. The first skanda known as Ganita deals with mathematical astrology, the subject matter of this book. The rules of ganita were compiled into different treatises called **Siddhantas** numbering as many as eighteen in the ancient times. The great astrologer Varahamihira considered only five out of these in his famous work Pancha Siddhantika.

The second skanda known as **Samhita** means a collection or compendium of law or code of any branch of learning like the Narada Samhita, Garga Samhita and Vashishta Samhita etc. These are used for predicting natural phenomena like earthquakes, weather, famines, epidemics, political and economic developments of nations and the world through planetary movements and combinations.

The third skanda, **Jataka** or **Hora** is natal predictive astrology for the guidance of individuals. It is that part of jyotisha which deals with the birth of a person at a given time to enjoy or suffer his sanchita (accumulated) karmas, to fulfill his prarabdha (the karma allowed for his incarnation) and create agami (future) karmas by his kriyamaan and continued actions. Astrology is a complete scheme of the three skandas for studying the effects of planets on man and his world.

We therefore invoke the Almighty by offering prayers and seek his blessings to attain proficiency in mathematical astrology. It is a sacred astrological tradition to offer prayers to Lord Ganesha, the lord of intelligence, Goddess Saraswati, the goddess of learning and the Navagrahas or the nine planets which Indian astrologers make use of for their predictions. These planets represent the Avataras or reincarnation of Gods and the karmas of an individual in the horoscope.

CHAPTER II

ASTRONOMY-I
THE SOLAR SYSTEM

"The whole universe moves at the will of its creator, but it moves under the controlling influence of fate. It is not free."

- Mahabharata, II. 57. 4.

Astronomy and Astrology

From times immemorial Astronomy and Astrology were considered inseparable and part of the same discipline. But gradually their understanding and development was distinctly separate and they emerged as separate disciplines. But the fact still remains that Astrology is based on Astronomy and to that extent they are inseparable.

Astronomy is the study of objects and phenomena beyond the Earth's atmosphere. Astrology on the other had uses the position of these celestial bodies called stars and planets for their effect on us. This is not solely for the purpose of determining future events but to understand the psychology, traditional beliefs and divination behind this entire process.

Thus Hindu astrology is not meant for forecasting of future events but more importantly for giving a direction in moments of need and crisis. This direction is always in the form of guidance or *margdarshan*. To have a good and overall understanding of astrology it is imperative to know those concepts of Astronomy which are relevant to astrology.

The Origin of Universe

Cosmology refers to the study of universe in its totality. This may include the background of science, philosophy, traditional beliefs and religion. As per National Aeronautics and Space

Administration (NASA) **Cosmogony** is the scientific field of origin of universe whereas **Cosmology** is the study of structure and changes in the present universe.

The study of origin and development of the universe and planets indicate the origin of universe dating back to 13.7 billion years ago. The most accepted is the **Big Bang** theory by which the universe started with an explosion. Very recently, in 1920's, it was realised that our galaxy, the Milky Way is one of the millions of such galaxies. Our galaxy too is moving or others receding and hence everything in the cosmos is in a state of flux.

Thus we are living in an expanding universe. As per this theory a stage comes when the expansion is reversed leading to the collapse of the universe when the **Big Crunch** may occur due to the forces of gravitation. This will again be followed by a new big bang to produce another expanding universe and the cycle will continue.

As for the origin of planets, it is believed that the cloud of gas and dust condensed due to gravitational collapse to form the solar system about 4.57 billion years ago. This process of condensation leads to formation of a disc. When the mass of this disc is very large then its central portion heats up to form a new star. But when the disc forms several small bodies then it leads to the formation of a planetary system. When the planets are situated closer to the star around which they orbit, then they lose their gaseous envelope due to intense heat of the star and small rocky planets are formed, whereas planets which are far away from the star become large gaseous bodies.

Despite recent scientific advancements, the complete understanding of origin and development of the universe is yet to come. This field of Cosmology is very vibrant as several new discoveries in particle physics together with keen observations give rise to various theories of how our universe formed, developed and where it is destined to reach.

Hindu view of the Origin of Universe

As compared to the modern explanation, Hindu mythology gives a number of diverse accounts as regards the origin of universe.

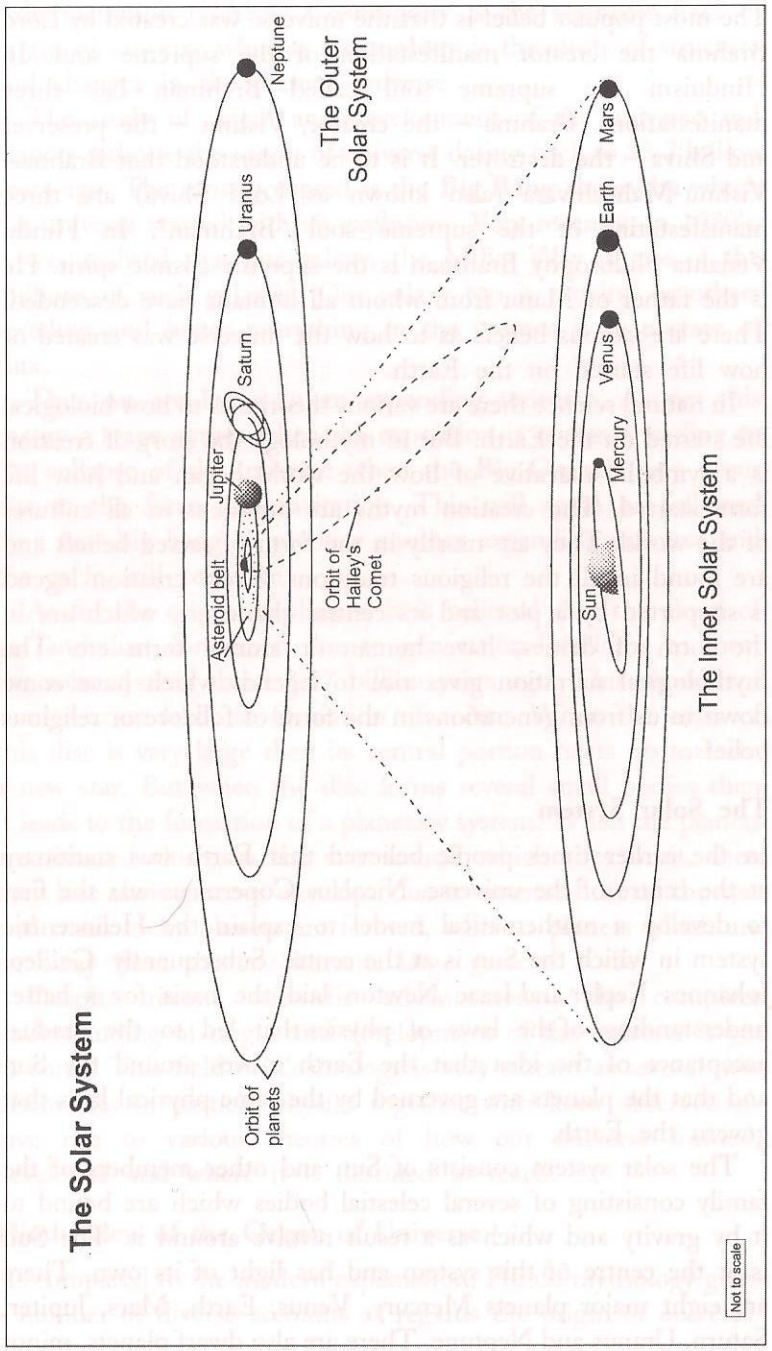
The most popular belief is that the universe was created by Lord Brahma the creator manifestation of the supreme soul. In Hinduism the supreme soul called Brahman has three manifestations. Brahma – the creator, Vishnu – the preserver and Shiva – the destroyer. It is to be understood that Brahma-Vishnu-Maheshwara (also known as Lord Shiva) are three manisfestatins of the supreme soul "Brahman". In Hindu Vedanta philosophy Brahman is the supreme cosmic spirit. He is the father of Manu from whom all humans have descended. There are various beliefs as to how the universe was created or how life started on the Earth.

In natural science there are various theories as to how biological life started on the Earth. But in mythology the story of creation is a symbolic narrative of how the world began and how life form started. The creation myths are prevalent in all cultures of the world. They are mostly in the form of sacred beliefs and are found in all the religious traditions. Every creation legend is supported by a plot and its central characters, which are in the form of deities, have human or animal form etc. The mythological narration gives rise to legends which have come down to us from generations in the form of folklore or religious beliefs.

The Solar System

In the earlier times people believed that Earth was stationary at the centre of the universe. Nicolaus Copernicus was the first to develop a mathematical model to explain the Heliocentric system in which the Sun is at the centre. Subsequently Galileo, Johannes Kepler and Isaac Newton laid the basis for a better understanding of the laws of physics that led to the gradual acceptance of the idea that the Earth moves around the Sun and that the planets are governed by the same physical laws that govern the Earth.

The solar system consists of Sun and other members of the family consisting of several celestial bodies which are bound to it by gravity and which as a result revolve around it. The Sun is at the centre of this system and has light of its own. There are eight major planets Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. There are also dwarf planets, minor



planets or asteroids, meteoroids, comets, interplanetary gas, dust and solar wind. Some planets also have natural satellites which revolve around the respective planets and in many ways mimic the solar system on a smaller scale.

The orbits of these eight planets are almost circular and lie within the ecliptic plane. The inner four planets Mercury, Venus, Earth and Mars are called terrestrial planets as they comprise of rocks and metals. The outer four planets Jupiter, Saturn, Uranus and Pluto are much larger in size and primarily gaseous in nature. Out of these the first two Jupiter and Saturn mainly contain hydrogen and helium gases whereas the outermost two planets Uranus and Neptune are formed of ice containing primarily water, ammonia and methane.

Out of the eight major planets, six were known to mankind since ancient times. These in order of increasing distance from the Sun are Mercury, Venus, Earth, Mars, Jupiter, and Saturn. With advances in Astronomy, three new additions were made in recent years. These were Uranus, Neptune and Pluto. Uranus, also called Herschel, was discovered in 1781 by Sir William Herschel who had initially thought that it was a comet. Neptune was discovered in 1846 by German astronomers Johann Galle and Heinrich d'Arrest. These two planets, Uranus and Neptune, find mention in the star catalogues of the previous centuries but because they moved so slowly, they were thought to be stars.

Pluto was discovered very recently in 1930 by US astronomer Clyde Tombough. Pluto was originally classified as a planet but now it is classified as a dwarf planet in the solar system. From its discovery in 1930 to as late as 2006 it was considered to be the ninth planet. As compared to Jupiter Saturn Uranus and Neptune which are large in size, Pluto is a small, cold and icy. Pluto's perihelion lies inside the orbit of Neptune and thus it is considered to be an escaped satellite of Neptune.

Pluto and its largest Moon Charon are treated as celestial bodies in binary system as they revolve around each other. Pluto is no longer a planet as per the decision taken by International Astronomical Union in 2006. Hence we have only eight planets in our solar system.

The word planet is derived from the Greek noun *planetes*, Latin *planeta* and French *planete* which all signify the celestial body's property of being a wanderer. It was called a wanderer because planets or for that matter any celestial object wanders against the backdrop of stars on the celestial sphere.

Initially it was believed that the Earth was at the centre of the universe and all the celestial objects revolve around it. However Aryabhata-I (born in 476 A.D.) stated that the Earth is in orbit around the Sun. Historically the credit for this discovery has been given to Copernicus (1543 A.D.) who challenged the earlier theory of Ptolemy that the Earth lay at the centre.

The view of Copernicus was greeted with intense hostility by religious establishments particularly the Roman Catholic Church. Galileo, the noted astronomer of Galileo's telescope fame spent the last nine years before his death in strict house arrest for supporting Copernicus that the Earth was in orbit around the Sun. He was forbidden to publish or discuss his ideas which had put Ptolemaic system in bad light. Over a period of time the view point of Copernicus got the acceptance it deserved.

There were various theories with regard to planetary orbits also. But their accurate nature was explained by Johannes Kepler in 17th century and is even valid till today. The planetary orbits are not in the same plane and are elliptical in shape. The orbit of the Earth makes the ecliptic plane whereas all other planets are slightly inclined to the ecliptic.

The solar system can be divided into two types of planets based on their size and comparative distances from the Sun. The **inner solar system** consists of planets Mercury, Venus, Earth and Mars. They are small in size and comparatively closer to the Sun. Inner solar system also contains the asteroid belt which lies between the orbits of Mars and Jupiter. The radius of this entire region of inner solar system is less than the distance between Jupiter and Saturn.

The planets Jupiter, Saturn, Uranus and Neptune fall under the **outer solar system**. They are characterised by large sizes, large Moons, vast distances from the Sun and their ring systems. It also comprises of comets which visit the solar system for short periods during their journey.

All planets have an envelope of atmosphere around them. The planets of inner solar system have comparatively thinner atmospheres as compared to those of the outer solar system. All planets revolve around the Sun and also rotate on their axes. The direction of their revolution and rotation is identical except in the case of Venus and Uranus. This is explained on page 22. The period of rotation of planets on their axes and the period of their revolution around the Sun for the eight planets are :

Planet	*Period of rotation on its axis*	*Period of revolution or sidereal period around the Sun*	
		In days	*In years*
Moon	27.322 days	29.531 days	0.08 years
Mercury	58.640 days	87.969 days	0.24 years
Venus	-243.020 days	224.701 days	0.62 years
Earth	23.934 hours	365.256 days	1.00 years
Mars	24.623 hours	686.979 days	1.88 years
Jupiter	9.842 hours	4332.590 days	11.86 years
Saturn	10.233 hours	10759.230 days	29.46 years
Uranus	-17.240 hours	30688.450 days	84.01 years
Neptune	18.400 hours	60181.300 days	164.79 years

Distances in Space

The distances in space are so large that they are measured in light years which means the distance travelled by light, in vacuum, in one year. Light travels at the rate of approx. 3,00,000 kilometers per second. To be exact it is 299,792,458 meters per second. By this calculation one light year is equal to about 9460730.5 million kilometers or 9460.7 billion kilometers. One light-year is equal to:

- exactly 9,460,730,472,580.8 km
- about 5,878,625,373,183.608 miles
- about 63,241.1 astronomical units
- about 0.306601 parsecs
- exactly 31,557,600 light-seconds

The Sun is a star and the distance between the Sun and the next nearest star, the Alpha-Proxima Centuri (Proxima V645 Cen) is 4.2 light years away. From Earth this star is 2,70,000 times

more distant than Sun. In comparison the distance between the Sun and the planets in our solar system are much smaller.

The mean distance between the Sun and the Earth of about 149.6 million kilometers is also known as distance of 1 A.U. or One Astronomical Unit. The distances of planets from the Sun in million kilometers and in A.U.'s are as follows:

The Planet	*Mean distance from the Sun*	
	in Million Kilometers	*in Astronomical Units (AU's)*
Mercury	57.91	0.387
Venus	108.21	0.723
Earth	149.60	1.000
Mars	227.94	1.524
Jupiter	778.41	5.203
Saturn	1426.73	9.537
Uranus	2870.97	19.191
Neptune	4498.25	30.069

Another unit to understand the large distances in space is employed in Astronomy. It is called Parsec. Its abbreviation is pc. Its length is equal to 3.26 light-years or a little less than 31 trillion kilometers. An arc of length 1 AU would subtend an angle of 1 second at the centre of the circle, the radius of which is 1 parsec. The term is the short form of "parallax-arc second".

The vast distances that exist between the Earth and the last two planets Uranus and Neptune is the reason why they have not been considered to have any provable effect on human beings. But researches will have to be done with an open mind in the years to come.

In Hindu astrology we recognise the Moon as well as Rahu and Ketu (the nodes) as having immense influence on man and the world because of proofs of successful predictions on this basis. For this reason they are treated as grahas or planets.

Geocentric and Heliocentric systems

Hindu astrology is known as pratyaksha shastra which means what is visible and therefore it follows the apparent movement of planets. In other words, as per Hindu astrology, planets give astrologically predictable results because of their apparent position and movement around the earth.

In geocentric observations the Earth is taken as the centre of the universe. As stated earlier, before Copernicus the Earth was considered to be stationary and the Sun and other planets were considered to be moving around it. Though we know that Earth is moving like other planets around the Sun, yet for the purpose of Hindu astrology we continue to follow the ancient geocentric system of observations.

In heliocentric observations the Sun is at the centre of the universe and other planets revolve round it. Astronomers are more interested in heliocentric observations.

Inner and Outer Planets

Mercury and Venus are situated between the Earth and the Sun and are called the minor, interior or inferior planets.

Mars, Jupiter and Saturn are situated far away from the Earth. Their orbits lie outside the Earth's orbit. They are called outer, exterior or superior planets. This classification of inner and outer planets is different from the inner and outer solar system explained earlier.

Planetary attributes

The planets Mercury to Mars are situated in the inner solar system and are terrestrial planets. The planets Jupiter to Neptune are situated in the outer solar system and are gaseous planets, are large in size and characterized by ring systems and having large number of natural satellites or moons. Important planetray attributes of planets are given below.

Name	Equatorial diameter(a)	Mass(a)	Orbital radius (AU)	Named Moons(c)	Rings
Mercury	0.382	0.06	0.39	0	no
Venus	0.949	0.82	0.72	0	no
Earth(b)	1.00	1.00	1.00	1	no
Mars	0.532	0.11	1.52	2	no
Jupiter	11.209	317.8	5.20	63	yes
Saturn	9.449	95.2	9.54	52	yes
Uranus	4.007	14.6	19.22	27	yes
Neptune	3.883	17.2	30.06	13	yes

Name	Rotation period (days)	Orbital period (Years)(a)	Inclination to ecliptic	Orbital eccentricity
Mercury	58.64	0.24	7.01°	0.206
Venus	-243.02	0.62	3.39°	0.007
Earth	1.00 (b)	1.00 (b)	0.00° (d)	0.017
Mars	1.03	1.88	1.85°	0.093
Jupiter	0.41	11.86	1.31°	0.048
Saturn	0.43	29.46	2.49°	0.054
Uranus	-0.72	84.01	0.77°	0.047
Neptune	0.67	164.79	1.77°	0.009

(a) Measured relative to the Earth

(b) These are not absolute values of Earth's attributes. Keeping Earth's value as 1 the comparison with other planets is highlighted.

(c) The rotation period of planets Venus and Uranus is shown as minus (-). This indicates that they rotate in the opposite direction to that in which they orbit the Sun. All other planets rotate on their axes in the same direction as they orbit the Sun.

(d) Inclination to the ecliptic which is the plane containing earth's orbital path.

The Sun

It is the prominent body of our solar system and life giver being the only luminary in the true sense. The Sun was formed about 4.57 billion years ago when a hydrogen molecular cloud collapsed. It is the star around which the Earth and other members of the solar system revolve. Sun is having a mean distance of 149.6 Million Kilometers from the Earth. At this average distance light travels from the Sun to Earth in about 8 minutes and 19 seconds. The energy of this sunlight supports all kinds of life on earth by photosynthesis. This sunlight also determines the Earth's climate and weather.

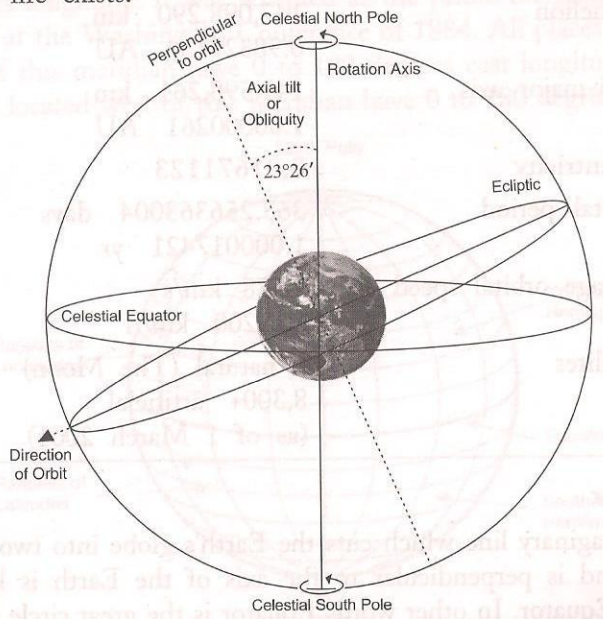
The effect and importance of Sun was known to the mankind from prehistoric times. In several religious beliefs Sun is

considered to be a God and worshipped as a deity. The study of Sun is not as old as that of other planets because it was difficult to make solar observations in the earlier times. The development of scientific knowledge of Sun is still underway and will improve with advances in science.

The Earth

This planet is third in distance from the Sun and the only planet to support life. Radioscopic studies on oldest crustal rocks reveal that the age of Earth could be 3.8 billion years. But there is evidence that the Earth must have formed along with other members of the solar system 4.57 billion years ago.

The Earth is 12,756 kilometers in diameter at the equator and 12,714 kilometers as measured through the poles. It is the largest planet of the inner solar system. It rotates on its axis in about 23 hours and 56 minutes. The Earth takes about 365.25 days to complete one orbit around the Sun. It has one natural satellite called the Moon and more than 8300 artificial satellites as on March 1, 2001. It is the only planet in our solar system where life exists.



The Earth

The Earth rotates or spins on its axis from west to east. Therefore all heavenly bodies appear to be orbiting the Earth from east to west. The Earth's axis is tilted at about 23 degrees and 26 minutes to a line perpendicular to the Earth's orbit around the Sun. The northern end of the axis points to the pole star. The two points on the Earth's axis which are 90 degrees above or below the equator are called the north and south poles of the Earth.

Earth orbits the Sun at an average distance of about 149.6 million kilometers every 365.2564 mean solar days, or one sidereal year. As observed from Earth, Sun appers to move at a rate of about 1° per day. Because of this motion, on an average it takes 24 hours or one solar day for Earth to complete a full rotation about its axis. The average orbital speed of the Earth is about 29.8 km/second (107,000 km/h).

Orbital characteristics of Earth	
Aphelion	152,098,232 km 1.01671388 AU
Perihelion	147,098,290 km 0.98329134 AU
Semi-major axis	149,598,261 km 1.00000261 AU
Eccentricity	0.01671123
Orbital period	365.256363004 days 1.000017421 yr
Average orbital speed	29.78 km/s 107,200 km/h
Satellites	1 natural (The Moon) 8,300+ artificial (as of 1 March 2001)

Equator

The imaginary line which cuts the Earth's globe into two equal parts and is perpendicular to the axis of the Earth is known as the Equator. In other words Equator is the great circle drawn on the surface of the Earth which is at right angle to the axis

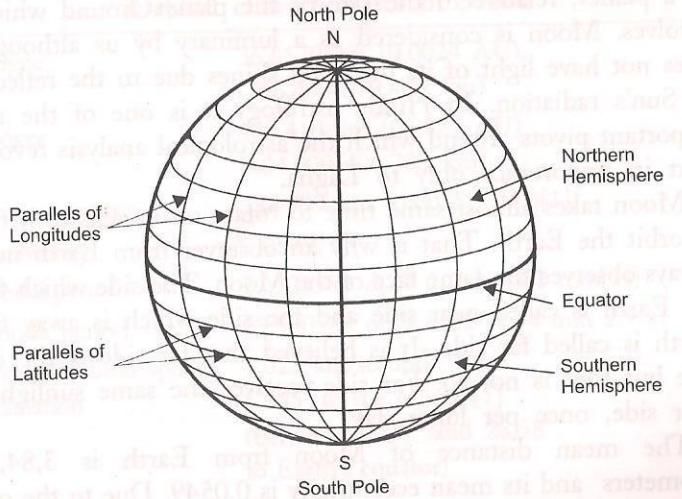
of its rotation and which passes through the centre of the Earth's sphere. It is a band which divides the Earth into two equal and symmetrical parts at the place of its greatest width.

The Equator divides the Earth's sphere into two equal halves called the northern and southern hemispheres. All points at the equator are equidistant from the north and south poles.

Geographical Longitudes and Latitudes (locating a place)

If we draw imaginary lines of concentric circles on the globe of the Earth (concentric means having the same or common centre as the centre of the Earth), passing through the north and south poles, then these circles will cut the equator at right angles. These imaginary lines are known as the parallels of longitudes or meridians of longitudes. Longitude is measured east or west of the prime meridian.

The prime meridian on the Earth passes through the original Royal Greenwich Observatory near London. Therefore the meridian passing through Greenwich is considered the circle of zero longitude and all places falling on this meridian have 0 degrees longitude. It was accepted as the prime meridian of the world at the Washington Conference of 1884. All places located east of this meridian have 0 to 180 degrees east longitudes and places located west of this meridian have 0 to 180 degrees West



Geographical Longitudes and Latitudes

longitudes. 180 degrees east and 180 degrees west is the same meridian circle lying opposite to 0 degree meridian and is called the International Date Line.

Now, if we draw imaginary circles parallel to the Earth's equator the centers of which fall at the axis of the Earth, these imaginary lines are known as parallels of latitudes. All places located at the equator have 0 degree latitude. Places located north of equator will have 0 to 90 degrees north latitudes and places located south of equator will have 0 to 90 degrees south latitudes depending upon the location of these places. The point of intersection of 0 degree longitude and the Earth's equator is the reference point for locating any place on the Earth.

In short we can say that the longitude of a place is the angular distance of the place's meridian, east or west of the prime meridian. Whereas latitude of a place is its angular distance north or south of the equator, measured along its meridian. With these coordinates namely the longitudes and latitudes, any place on the Earth can be located. The prime meridian of other heavenly bodies is defined with respect to a known surface feature.

The Moon

It is the only natural satellite of the Earth. It is also the 5th largest satellite in the solar system and the largest natural satellite of a planet, relative to the size of the planet around which it revolves. Moon is considered as a luminary by us although it does not have light of its own and shines due to the reflection of Sun's radiation. In Hindu astrology it is one of the most important pivots around which the astrological analysis revolves, next in importance only to Lagna.

Moon takes almost same time to rotate on its axis as it takes to orbit the Earth. That is why an observer from Earth nearly always observes the same face of the Moon. The side which faces the Earth is called near side and the side which is away from Earth is called far side. It is believed that far side is the dark side but that is not so. Far side receives the same sunlight as near side, once per lunar day.

The mean distance of Moon from Earth is 3,84,000 kilometers and its mean eccentricity is 0.0549. Due to the orbit being an ellipse the distance varies from 3,56,400 kilometers

at perigee to 4,06,700 kilometers at apogee. These two terms must be understood here. Perigee is that point in the orbit of the Moon which is nearest to the Earth. The term is derived from the combination of words peri + gee. Peri means near and gee signifies the Earth derived from geographical.

Apogee is that point in the orbit of the Moon which is farthest from the Earth. This term is also derived from the combination of words apo + gee. Apo is a Greek word which means away from and gee again signifies the Earth.

At perigee (the nearest point) the Moon is 356400 kilometers away from the Earth. [At a(1-e)].

At apogee (the farthest point) the Moon is 406700 kilometers away from the Earth. [At a(1+e)].

Note : Here "a" is the mean distance between the Moon and the Earth whereas "e" is the eccentricity of the orbit. No planetary orbits are circular in shape, but are elliptical having two diameters, one longest and the other shortest. With the result that they do not have one centre or the focus but two centers or foci. It is further explained under the Kepler's Laws of planetary motions. The disc of Moon is of exactly the same size as that of the Sun. This becomes obvious during the solar eclipse when Moon's disc covers the Sun.

Orbital characteristics of Moon	
Perigee	362,570 km (0.0024 AU) (356,400-370,400 km)
Apogee	405,410 km (0.0027 AU) (404,000-406,700 km)
Semi-major axis	384,399 km (0.00257 AU)[1]
Eccentricity	0.0549[1]
Orbital period	27.321582 d(27 d 7 h 43.1 min[1])
Synodic period	29.530589 d(29 d 12 h 44 min 2.9 s)
Average orbital speed	1.022 km/second
Inclination	5.145° to the ecliptic[1] (between 18.29° and 28.58° to Earth's equator)
Satellite of	Earth

Physical characteristics of Moon	
Mean radius	1,737.10 km
Equatorial radius	1,738.14 km
Polar radius	1,735.97 km
Circumference	10,921 km (equatorial)
Sidereal rotation period	27.321582 days
Axial tilt	1.5424° (to ecliptic) 6.687° (to orbit plane)

Moon is the brightest object in the sky next only to the Sun. Its size and phases influence us immensely and this influence has reflected in religion, cultures, calendars and mythology of all races and civilizations. The calendars known to mankind had phases of the Moon as their logical basis. The waxing and waning of Moon formed the ideological basis of Hindu panchang system by dividing the lunar month into Shukla paksha and Krishna paksha - the bright half and the dark half respectively. Similarly the 30 days month is the approximation of the lunar cycle. In my view the word month might have originated from Moon. Some references of Latin word 'mensis' Greek word 'men' and also Latin word "metiri" were used to measure time which were roughly equal to a month.

From earliest times Moon has influenced art and literature immensely as it has provided the inspiration to relate beauty and purity to Moon. Countless references are made to the Moon in poetry, prose, music, visual and performing arts. In cultural and religious beliefs Moon has created immense impact. So much so that Moon is considered as a deity and worshipped as God.

In Astrology Moon is considered to be a planet having so great impact on us that it is next only to Sun in that importance. But as far as the influence on our thinking, mental inclinations, attitudes, beliefs and psychological significations are concerned it is the most important planet to influence us.

While a strong Moon aspected or associated with benefic planets may provide stability of mind and intelligence, a weak or afflicted Moon associated or aspected by malefic planets may cause anxiety, dissatisfactions, depression or insanity. All that

is the subject matter of predictive astrology but the fact remains that Moon is an important celestial object which we consider as a planet in Hindu astrology.

Natural Satellites

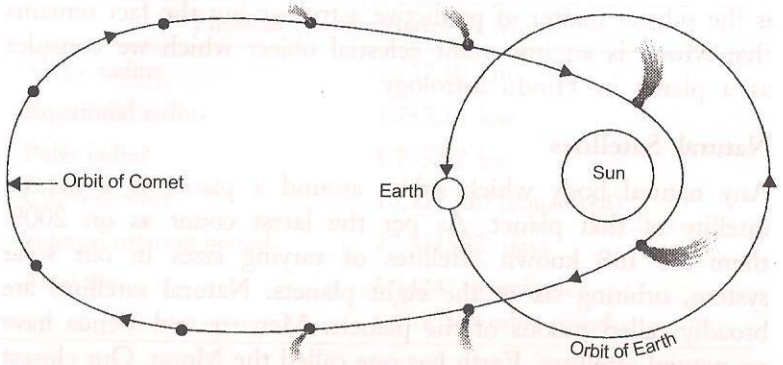
Any natural body which orbits around a planet is a natural satellite of that planet. As per the latest count as on 2009, there are 168 known satellites of varying sizes in our solar system, orbiting six of the eight planets. Natural satellites are broadly called moons of the planets. Mercury and Venus have no natural satellites. Earth has one called the Moon. Our closest neighbour Mars has two small natural satellites called Phobos and Deimos.

The seven largest satellites are Earth's Moon, Jupiter's Io, Europa, Ganymede and Callisto, Saturn's Titan and Naptune's Triton. Some of the large satellites like Ganymede and Titan are bigger than Mercury. There are groups of small satellites in huge quantities which form the ring system of large planets of the outer solar system. Jupiter, Saturn, Uranus and Neptune have prominent rings but the rings of Saturn are most elaborate. They are believed to be captured asteroids. Natural satellites mimic the planet which they surround in many ways, like the solar system, in a smaller scale.

Moon was considered to be a planet till Copernicus gave the theory of heliocentricism in 1543. But German astronomer Johannes Kepler was the first to describe it as a satellite in 1610. He termed the word satellite from the Latin word *Satelles* which means a guard, an attendant or a companion, because the natural satellite of a planet is the lifelong companion of the planet in its journey through the heavens.

Comets

A comet is a temporary member of the solar system and visits it at regular intervals. Comets are formed of ball of ice, dust and frozen gases in definite and highly elliptical orbits around the Sun. When a planet comes close to the Sun then it displays a visible, thin and fuzzy atmosphere and sometimes also shows a tail. This phenomena is due to the effect of solar radiation and solar wind on the nucleus of the comet.



A Coment in orbit around the Sun

The ball of the comet is called its nucleus and the twin tail which always points away from the Sun is the halo of gas and dust continuously swept away by the solar wind. When a comet, in its orbit, comes near to the Sun then the frozen ice and gas begin to vaporize and the comet becomes visible. Thus the greater periodicity of a comet to become visible leads to its faster destruction.

A famous comet is the Halley's comet which visits our inner solar system after every 76 years. It was discovered by Edmond Halley in 1696. First recorded in 240 B.C., it is visible to the naked eye and orbits in the opposite direction to the orbit of the planets. It was last observed in 1986 and its next return is expected in the year 2061. Latest count of comets as on January 2011 suggest that there are 4185 known comets.

Comets have been known to the mankind from ancient times. They have been largely associated with bad omens. There are many beliefs which suggest that the return of the comet is associated with world-altering changes.

Asteroids

The belt of minor planets located mainly between the orbits of Mars and Jupiter are called asteroids. There are an estimated 100 million asteroids in the main belt. Out of these there are over 1 million which have a diameter of over 1 kilometer each.

There are certain asteroids which travel in the same orbit as Jupiter and are 60° ahead or 60° behind as seen from the Sun.

These are called Trojan minor planets or Trojan group of asteroids. These are the fragments of once bigger minor planets.

The orbits of asteroids are in the gravitational influence of Jupiter. Orbits of some of the asteroids are highly elliptical so that they sometimes come in between the orbits of Earth and Mars.

Meteoroid, Meteor and Meteorite

Meteoroid: Meteoroids are small bodies in the interplanetary space which are too small to be studied individually or separately. A meteoroid is a mass of rock, fragments of planets, or dust particles floating in the space.

Meteor: When a meteoroid comes in contact with the atmosphere then due to the gravitational force its velocity increases and friction with the atmosphere creates enough heat to burn the meteor. A shooting star or a streak of light seen at night is nothing but a meteoroid which is burning due to this friction and is called a meteor.

Meteorite: The remnants of meteors which do not completely burn out in the atmosphere of the Earth and hit the Earth's surface are called meteorites. A meteorite has a velocity of 74 km/second when it hits the Earth. They are basically those asteroids which have highly eccentric orbits and during their journey they cross the orbit of the Earth, get into the atmosphere and get attracted towards the Earth's surface due to gravitational pull.

Solar Wind

The small particles in the interplanetary space consisting of protons, electrons, atoms, molecules and ions get ionized due to Sun's ultra violet radiation which is ejected from the Sun. This radiation can reach distances of over 100 astronomical units in the interplanetary space. The effect of solar wind is visible to the naked eye when we see the tail of a comet. Solar wind sweeps the nucleus giving rise to the twin tails of the comet which always align away from the Sun.

Kepler's Laws of Planetary Motion

Before Kepler the true nature of planetary orbits was not understood. It was believed that planets had uniform circular

orbits. Johannes Kepler (1571 - 1630) was a German astronomer who firmly believed that some mathematical relation existed that could make sense of the planetary system.

Kepler always thought that there was some precise clockwork that governed the celestial machinery. In 1609 he accurately explained the elliptical orbits of planets around the Sun (and for that matter of all heavenly bodies in orbit).

Kepler's first law (K-1)
Deals with elliptical orbits

According to this law, the planetary orbit is not circular but elliptical in shape. This means that it is flattened at the top and bottom and bulged at the centre. Each planet moves in an elliptical orbit around the Sun, with Sun occupying one of the two foci of the ellipse.

This elongated shape has the longest distance of the figure called the major axis. Whereas the perpendicular drawn at the centre of the major axis is the shortest distance of the figure and is called the minor axis.

Major axis when divided into two equal parts then each half is called a semi major axis. Similarly half of the minor axis is called semi minor axis. The points located from the centre of the major axis, which are symmetrical and equidistant from the centre are called foci. Some of these concepts need to be understood in greater detail.

An Ellipse

An ellipse is part of a "family" of mathematical curves. Roughly speaking, an ellipse is a circle with the opposite ends of a diameter pulled outward, which distorts the circle into an oval-shaped figure.

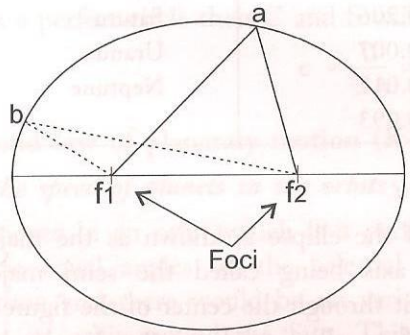
Some Properties of an Ellipse

1. Sum of distances from foci are constant

There are two points on the major axis, called the foci (singular form is focus), about which the figure is roughly symmetrical. In a planet's orbit, the Sun occupies one focus whereas the other one is empty. The sum of the distances from each of the foci to every point on an ellipse is constant. In terms of the diagram

given here the sum of distances from the foci to any point on the ellipse is constant.

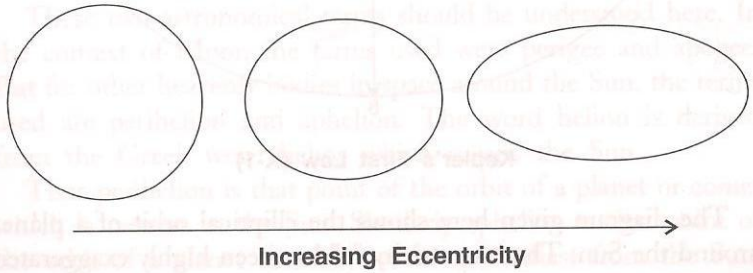
Thus f1a + f2a = f1b + f2b = constant



Sum of distances from foci are constant

2. Eccentricity

The amount of "flattening" of the ellipse is called eccentricity. Thus, in the following figure the ellipses become more eccentric from left to right. If we consider a circle as a special case of an ellipse with zero eccentricity, when the ellipse is more flattened the eccentricity keeps on increasing towards one. Thus, all ellipses have eccentricities lying between zero and one. Eccentricity is the quality of a curve or a shape which is not concentric (having common centre) or in other words the arcs of which do not have a common centre. The shape of the ellipse is defined by its eccentricity.



Increasing Eccentricity

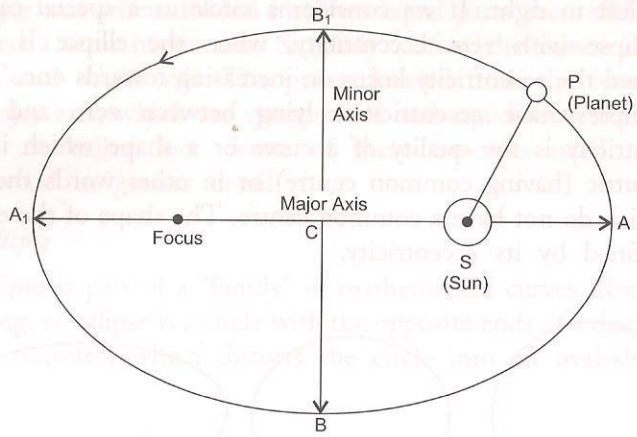
The orbits of the planets are ellipses but the eccentricities are so small for most of the planets that they look nearly circular.

The table below shows the eccentricity of various planets.

Planet	*Eccentricity*	*Planet*	*Eccentricity*
Moon	0.0549	Jupiter	0.048
Mercury	0.206	Saturn	0.054
Venus	0.007	Uranus	0.047
Earth	0.017	Neptune	0.009
Mars	0.093		

3. Size of the orbit

The long axis of the ellipse is known as the major axis, with half the major axis being called the semi major axis, and perpendicular to it through the center of the figure is the minor axis. The size of an elliptic orbit is set by the length of the semi major axis. The average separation of a planet from the Sun as it goes around its elliptical orbit is equal to the length of the semi major axis. Thus, the term "radius" of a planet's orbit usually means the length of the semi major axis.



Kepler's First Law (K-1)

The diagram given here shows the elliptical orbit of a planet around the Sun. The eccentricity "e" has been highly exaggerated here. Real planetary orbits are nearly circular. If eccentricity of an orbit is zero then it is a perfect circle and both foci are at the centre. As "e" increases towards "1" the ellipse becomes more

elongated and the foci move away from the centre.

As per the diagram Eccentricity $e = \frac{CS}{CA}$

When it is a perfect circle then C and S will coincide so that

$$e = \frac{0}{CA} = 0$$

Kepler's second law of planetary motion (K-2)

Deals with the speed of planets in the orbits

If a planet moves in an orbit which is a perfect circle then it would traverse equal angles on the celestial sphere in equal intervals of time and there would be no variation of speed of any planet in its orbit around the Sun. This was believed to be so before Kepler gave his laws of planetary motion.

As per his theory when a planet is closer to Sun it moves in faster motion as compared to when it is farthest from Sun when it becomes slowest.

This variation of speed is due to Kepler's second law which states that the imaginary line joining the planet to the Sun called radius vector, sweeps out equal areas in equal times as the planet travels around the ellipse.

Kepler's second law of planetary motion explains the significance of eccentricity. The speed of the planet varies along its orbit. It is fastest at perihelion or when it is nearest to the Sun and slowest at aphelion when it is farthest from the Sun. In Hindu astrology this is known as sheegrochha and mandochha respectively.

These two astronomical terms should be understood here. In the context of Moon the terms used were perigee and apogee. But for other heavenly bodies in space around the Sun, the terms used are perihelion and aphelion. The word helion is derived from the Greek word helios which means the Sun.

Thus perihelion is that point of the orbit of a planet or comet which is nearest to the Sun. Similarly aphelion is that point of the orbit of a planet or comet which is farthest from the Sun.

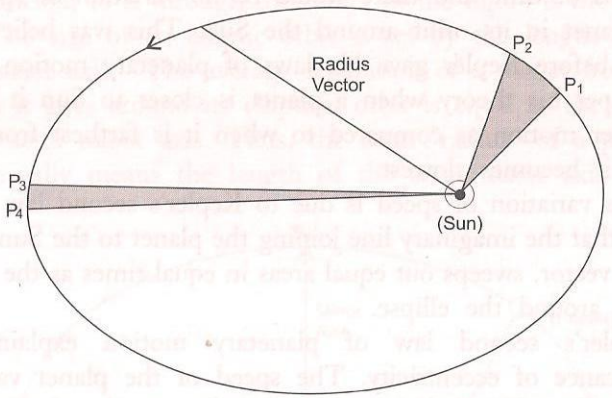
Maximum distance of a planet from Sun at aphelion = a(1+e)

Minimum distance of a planet from Sun at perihelion = a(1-e)

Where "a" = mean distance between the planet and the Sun
"e" = eccentricity of the planet

On about 3rd January each year the Earth in its orbit around the Sun is at its perihelion. This position has no relationship to the seasons. The Earth is at aphelion around 4th July each year. These dates however change with time due to precession and other orbital factors.

In the diagram given on the next page each shaded area in the planets orbit is equal and by the Kepler's second law the planet takes the same time to cover the arc of the orbit determined by these areas. The above two laws were expounded by Kepler in 1609. Ten years later in 1619 he proposed the third law.



A planet takes same time to move from P_1 to P_2 as it does from P_3 to P_4 and thus travels faster when it is nearer to the Sun

Kepler's Second Law (K-2)

Kepler's third law of planetary motion (K-3)

Explains the harmonious relationship of proportions

As per Kepler's third law of planetary orbits, the square of orbital (or sidereal) period of a planet is equal to cube of its mean distance from the Sun. The orbital period is the sidereal period of a planet in orbit around the Sun. Mean distance of a planet from Sun is its semi major axis or half of major axis.

Hence as per third law $T^2 \propto D^3$

where T = sidereal period of the planet

where D = mean distance of the planet from the Sun

where $\propto$ = proportional to

This means that a planet's mean distance from Sun is related to the time taken by it to complete its elliptical orbit around the Sun in the above mentioned proportion.

Planet	*Sidereal period*		*Mean distance from Sun*		T^2	D^3
	days	*years (T)*	*million kms.*	*AU[5] (D)*		
Mercury	87.97	0.24	57.94	0.39	0.06	0.06
Venus	224.70	0.62	108.15	0.72	0.38	0.38
Earth	365.26	1.00	149.67	1.00	1.00	1.00
Mars	686.98	1.88	227.88	1.52	3.53	3.54
Jupiter	4332.59	11.86	778.28	5.20	140.65	140.85
Saturn	10759.23	29.46	1427.00	9.54	867.89	868.00

The third law relationship is explained in the following table for planets from Mercury to Saturn.

Hence it can be seen that as per Kepler's third law the square of the sidereal period of a planet is proportional to the cube of its mean distance from the Sun.

The third law is very important as it is considered a yardstick for the solar system. It gave the mathematical relationship between the orbit size and sidereal period of a planet. This later helped Newton to suggest that gravity varied as the inverse square of distance.

CHAPTER III

ASTRONOMY-II
THE CELESTIAL

"The man who has renounced all desires and who conducts himself without ego, arrogance, and attachment is the one who achieves peace."

–Bhagwad Gita, II. 71.

Extending the principle of locating a place on the Earth's surface, as explained in the previous chapter, we can locate a heavenly body also, for which the following concepts need to be understood.

Celestial Sphere

If we imagine to extend the surface of the Earth indefinitely on the heavens on all sides, with the observer remaining at the centre, we get what is known as the Celestial sphere, the cosmic sphere or as in Sanskrit the *Brahmanda*. An observer can observe only half of this celestial sphere as an inverted bowl over his head. Similarly if we extend the Earth's axis indefinitely on both the sides to meet the celestial sphere, we get the celestial north and celestial south poles.

Celestial Equator

Similarly if we extend the Earth's equator indefinitely on the heavens, we will get an imaginary great circle which will cut the celestial sphere into two equal halves. This is known as the celestial equator. It divides the celestial sphere into northern celestial hemisphere and southern celestial hemisphere.

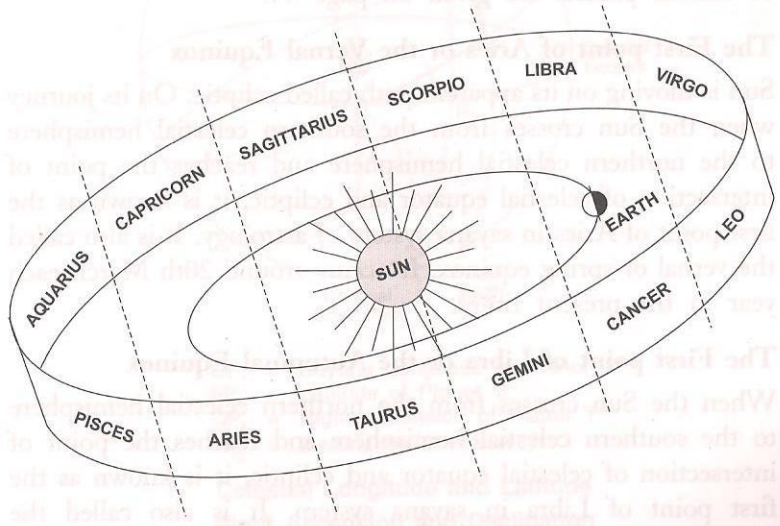
The entire celestial sphere together with all the planets appear to rise in the east and set in the west. This is due to the Earth's own rotation on its axis from west to east.

Ecliptic

As explained earlier, we follow the geocentric observations with the Earth at the centre of the universe and all other heavenly bodies in revolution around it. Sun also likewise appears to revolve around the Earth, rising in the east and setting in the west. The apparent path of the Sun (which is actually the path of Earth in revolution around the Sun) is known as ecliptic. This ecliptic is tilted at an angle of 23°26' approximately to the celestial equator due to the slant of the Earth's axis. This angle between the planes of ecliptic and equator is called the **obliquity of the ecliptic**. The mean obliquity of the ecliptic is 23°26'25.2" at present. Due to the gravitational influences of other planets this obliquity changes very slowly with time.

Zodiac

The broad belt or band of about 16 degrees extending 8 degrees on either side of the ecliptic in which all the planets are situated, in which Hindu astrology is interested, is known as Zodiac. This 16 degrees wide and 360 degree circular band on the heavens is divided into 12 equal parts or imaginary compartments of 30 degrees each. They are called the signs of zodiac. Each sign is



The Zodiac and its signs

named after a prominent constellation situated in it. There are 27 nakshatras or constellations of 13 degree 20 minutes each located in the zodiac. Hence two and a quarter nakshatras are located in each sign. The ecliptic passes through the centre of the zodiac. The names of signs and nakshatras are given in chapter VI.

Due to rotation of the Earth on its axis once a day, the zodiac also appears to revolve on its axis once a day with all the signs or *rashis*, planets and nakshatras located in it.

The important point to note here is that all planets and nakshatras are located in this band of zodiac. There has been a controversy as to whether this band is 8° or 9° on either side of the ecliptic. The deciding condition is that all planets are located in the zodiac containing 12 signs or rashis. Based on this fact this imaginary band is considered for astrological purposes.

All the planets move above or below the ecliptic and can get their north or south latitudes depending upon the inclination of their planetary orbits. The inclinations of orbits of all the planets lie well within 8° except that of Pluto which is not considered to be a planet influencing us in Hindu astrology.

Hence the band of the zodiac is 8° north or south of ecliptic and the total width of the zodiac is about 16°. The inclinations of various planets are given on page 44.

The First point of Aries or the Vernal Equinox

Sun is moving on its apparent path called ecliptic. On its journey when the Sun crosses from the southern celestial hemisphere to the northern celestial hemisphere and reaches the point of intersection of celestial equator and ecliptic, it is known as the first point of Aries in sayana system of astrology. It is also called the vernal or spring equinox. It occurs around 20th March each year in the present times.

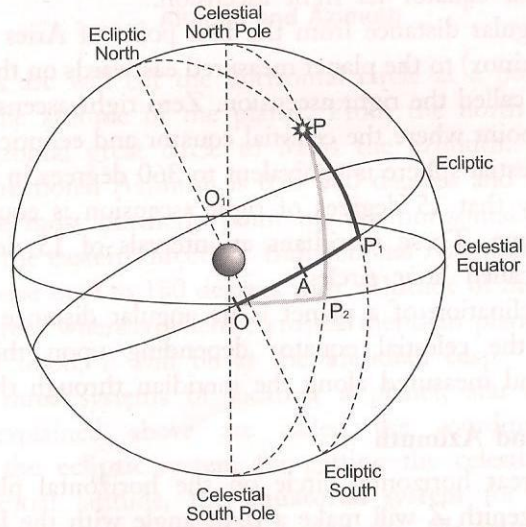
The First point of Libra or the Autumnal Equinox

When the Sun crosses from the northern celestial hemisphere to the southern celestial hemisphere and reaches the point of intersection of celestial equator and ecliptic, it is known as the first point of Libra in sayana system. It is also called the autumnal equinox and occurs around 23rd September each year.

When Sun crosses the equator the duration of the day and night is equal at all places on Earth. In the diagram given here vernal and autumnal equinoxes are shown at the points marked O and O_1 respectively.

Celestial longitude and latitude (Locating the planet)

To locate a planet P let us join the ecliptic north and south poles by an arc passing through the planet P and cutting the ecliptic at right angle. The distance from O to P_1 along the ecliptic is the sayana longitude of the planet P i.e. the distance from the first point of Aries in sayana system to the arc crossing the ecliptic at right angle. Similarly the angular distance from P to P_1 is the latitude of the planet P and is the perpendicular falling on the ecliptic from the planet P from north or south of the ecliptic depending upon the location of the planet. Thus the celestial longitude and celestial latitude in which astrologers are interested, are measured along and on the ecliptic.



OP_1 = Sayana Longitude of Planet 'P'
PP_1 = Latitude of Planet 'P'
OP_2 = Right Ascension of Planet 'P'
PP_2 = Declination of Planet 'P'

Celestial Longitude and Latitude
Right Ascension and Declination

In the broad band of about 16 degrees extending 8 degrees on each side of the ecliptic all the planets are located in which Hindu astrology is interested. This means that the latitude of these are never beyond 8 degrees north or 8 degrees south. This is so because the planets are in revolution around the Sun in almost the same plane and the inclination of these planetary orbits fall within this range. Incidentally the inclination of the planet Pluto is highest at about 17 degrees. We do not consider it to be one of the *navgrahas* or the nine planets which influence us. When we talk of navgrahas, we include Moon as well as Rahu and Ketu among them.

Right Ascension and Declination

Draw an arc connecting the celestial north and south poles, passing through the planet P and crossing the celestial equator vertically at point P_2. The angular distance from P to P_2 is the declination of planet P and the distance from O to P_2 along the celestial equator its right ascension.

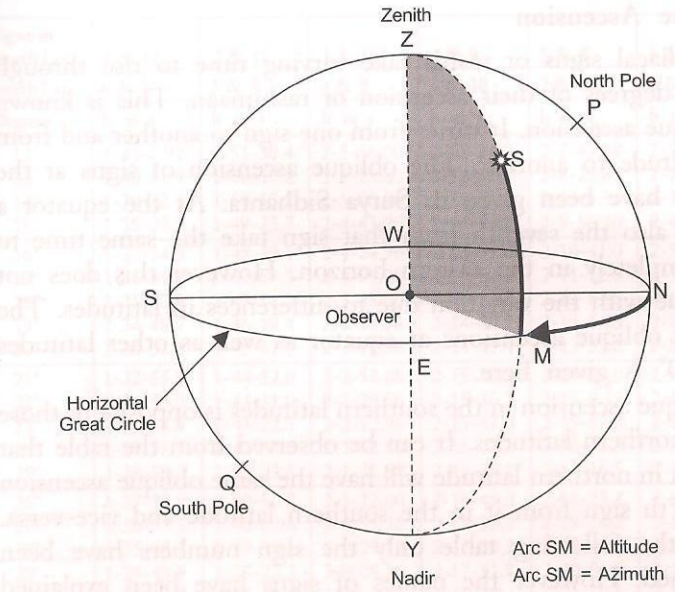
The angular distance from the first point of Aries in sayana (vernal equinox) to the planet measured eastwards on the celestial equator is called the right ascension. Zero right ascension is the reference point where the celestial equator and ecliptic intersect. As the celestial sphere is equivalent to 360 degrees in 24 hours, we can say that 15 degrees of right ascension is equal to one hour of time. These meridians at intervals of 15 degrees are therefore called hour circles.

The declination of a planet is its angular distance north or south of the celestial equator depending upon the planets position and measured along the meridian through the planet.

Altitude and Azimuth

Draw a great horizontal circle on the horizontal plane. The observer's zenith Z will make a right angle with the horizontal plane.

Here P is the north pole of the celestial sphere and the zenith is the observers plumb line over his head towards the celestial sphere, whereas S is the star, heavenly body or planet. When we join Z to S and then to Y (a point opposite Z called nadir),



Altitude and Azimuth

then this arc will cut the horizontal circle at a point M. Arc SM is the altitude of the planet. From the north side N on the horizontal great circle to M is the azimuth.

Unidirectional Azimuth is 0 to 360 degrees and is measured from the most northerly point on the horizontal great circle towards the eastern direction. Bidirectional Azimuth is 0 to 180 degrees east or 0 to 180 degrees west. Altitude of Sun at sunrise is 0 degrees whereas when it crosses meridian plane or vertical plane at noon, it will be at the meridian cusp.

The three systems of locating a planet, star or heavenly body, explained above are called the coordinate systems namely the **ecliptic system** for getting the celestial longitude and celestial latitude, the **equatorial system** for getting the declination and right ascension and the **Alt-azimuth system** for getting the altitude and azimuth. All these systems are used by astrologers and astronomers for various purposes. It is possible to transform one system of these coordinate systems into another by the use of the formulae of spherical trigonometry.

Oblique Ascension

All zodiacal signs or rashis take varying time to rise through the 30 degrees of their ascension or rashimaan. This is known as oblique ascension. It varies from one sign to another and from one latitude to another. The oblique ascension of signs at the equator have been given in Surya Sidhanta. At the equator a sign as also the seventh from that sign take the same time to rise completely in the eastern horizon. However this does not hold true with the variation due to differences in latitudes. The table of oblique ascensions at equator as well as other latitudes upto 60° is given here.

Oblique ascension in the southern latitudes is opposite to those in the northern latitudes. It can be observed from the table that any sign in northern latitude will have the same oblique ascension in the 7th sign from it in the southern latitude and vice-versa.

In the following table only the sign numbers have been mentioned. However the names of signs have been explained in chapter VI.

It may also be observed from the table that in the northern hemisphere, the signs from Capricorn to Gemini take lesser time to rise as the latitude increases. Whereas the signs Cancer to Sagittarius take greater time with the successive increase in latitude. This pattern is reversed in the southern hemisphere.

Table of Oblique Ascension

Signs in North Lat.	1 & 12	2 & 11	3 & 10	4 & 9	5 & 8	6 & 7
South Lat.	6 & 7	5 & 8	4 & 9	3 & 10	2 & 11	1 & 12
Degrees	h m s	h m s	h m s	h m s	h m s	h m s
0°	1-51-19.9	1-59-40.0	2-9-00.00	2-9-00.00	1-59-40.0	1-51-19.9
1°	1-50-29.5	1-58-59.7	2-8-42.48	2-9-17.52	2-0-20.40	1-52-10.3
2°	1-49-39.1	1-58-19.4	2-8-26.40	2-9-33.60	2-1-00.72	1-53-0.72
3°	1-48-48.7	1-57-39.1	2-8-09.60	2-9-50.40	2-1-41.04	1-53-51.1
4°	1-47-58.3	1-56-58.8	2-7-52.80	2-10-7.20	2-2-21.36	1-54-41.5
5°	1-47-7.92	1-56-18.4	2-7-36.00	2-10-24.0	2-3-01.68	1-55-31.9
6°	1-46-17.5	1-55-38.1	2-7-19.20	2-10-40.8	2-3-42.00	1-56-22.3
7°	1-45-27.2	1-54-57.8	2-7-02.40	2-10-57.6	2-4-22.32	1-57-12.7
8°	1-44-34.3	1-54-15.6	2-6-44.88	2-11-15.1	2-5-04.56	1-58-5.52
9°	1-43-43.9	1-53-35.2	2-6-28.08	2-11-31.9	2-5-44.88	1-58-55.2
10°	1-42-53.5	1-52-53.0	2-6-10.56	2-11-49.4	2-6-27.36	1-59-46.3
11°	1-42-0.72	1-52-12.7	2-5-53.76	2-12-6.24	2-7-07.44	2-0-39.12

Signs in North Lat.	1 & 12	2 & 11	3 & 10	4 & 9	5 & 8	6 & 7
South Lat.	6 & 7	5 & 8	4 & 9	3 & 10	2 & 11	1 & 12
Degrees	h m s	h m s	h m s	h m s	h m s	h m s
12°	1-41-7.92	1-51-30.4	2-5-36.00	2-12-24.0	2-7-49.68	2-1-31.92
13°	1-40-31.9	1-50-59.2	2-5-28.80	2-12-31.2	2-8-20.88	2-2-07.92
14°	1-39-22.3	1-50-13.2	2-5-00.96	2-12-59.0	2-09-6.96	2-3-17.52
15°	1-38-29.5	1-49-23.7	2-4-43.20	2-13-16.8	2-9-56.40	2-4-10.32
16°	1-37-34.3	1-48-39.1	2-4-24.96	2-13-35.0	2-10-41.0	2-5-05.52
17°	1-36-41.5	1-47-57.3	2-4-07.20	2-13-52.8	2-11-22.8	2-5-58.32
18°	1-35-43.9	1-47-11.2	2-3-48.00	2-14-12.0	2-12-8.88	2-6-55.92
19°	1-34-48.7	1-46-18.4	2-3-29.76	2-14-30.2	2-13-1.68	2-7-51.12
20°	1-33-51.1	1-45-41.0	2-3-10.56	2-14-49.4	2-13-39.1	2-8-48.72
21°	1-32-55.9	1-44-52.0	2-2-52.08	2-15-7.92	2-14-28.0	2-9-43.92
22°	1-31-55.9	1-44-11.0	2-2-29.76	2-15-30.2	2-15-9.12	2-10-43.9
23°	1-30-58.3	1-43-22.5	2-2-12.96	2-15-47.0	2-15-57.6	2-11-41.5
24°	1-29-58.3	1-42-34.8	2-1-52.80	2-16-07.2	2-16-45.3	2-12-41.5
25°	1-28-58.3	1-42-03.6	2-1-32.88	2-16-27.1	2-17-16.5	2-13-41.5
26°	1-27-55.9	1-40-56.8	2-1-12.00	2-16-48.0	2-18-23.2	2-14-43.9
27°	1-26-53.5	1-40-6.96	2-0-51.36	2-17-15.1	2-19-13.2	2-15-46.3
28°	1-25-48.7	1-39-39.1	2-0-29.76	2-17-30.2	2-19-41.0	2-16-51.1
29°	1-24-43.9	1-38-23.2	2-0-08.16	2-17-51.8	2-20-56.8	2-17-55.9
30°	1-23-36.7	1-37-29.5	1-59-45.6	2-18-14.4	2-21-50.6	2-19-3.12
31°	1-22-29.5	1-36-35.7	1-59-40.0	2-18-19.9	2-22-44.4	2-20-10.3
32°	1-21-19.9	1-35-40.0	1-59-00.0	2-19-00.0	2-23-40.0	2-21-19.9
33°	1-20-10.3	1-34-44.4	1-58-36.9	2-19-23.0	2-24-35.7	2-22-29.5
34°	1-18-58.3	1-33-46.8	1-58-12.9	2-19-47.0	2-25-33.3	2-23-41.5
35°	1-17-43.9	1-32-47.2	1-57-48.0	2-20-12.0	2-26-32.8	2-24-55.9
36°	1-16-29.5	1-31-47.7	1-57-23.2	2-20-36.7	2-27-32.4	2-26-10.3
37°	1-15-10.3	1-30-44.4	1-56-56.8	2-21-3.12	2-28-35.7	2-27-29.5
38°	1-13-51.1	1-29-41.0	1-56-30.4	2-21-29.5	2-29-39.1	2-28-48.7
39°	1-12-27.1	1-28-33.8	1-56-11.0	2-21-48.9	2-30-46.3	2-30-12.7
40°	1-11-5.52	1-27-28.5	1-55-35.2	2-22-24.7	2-31-51.6	2-31-34.3
41°	1-9-36.72	1-26-17.5	1-55-6.48	2-22-53.5	2-33-2.64	2-33-3.12
42°	1-8-07.92	1-56-18.4	1-54-36.0	2-23-24.0	2-34-13.6	2-34-31.9
43°	1-6-34.32	1-23-51.6	1-54-04.8	2-23-55.2	2-35-28.5	2-36-5.52
44°	1-5-00.72	1-22-36.7	1-53-33.6	2-24-26.4	2-36-43.4	2-37-39.1
45°	1-3-19.92	1-21-16.0	1-53-00.0	2-25-00.0	2-38-4.08	2-39-19.9
46°	1-1-39.12	1-19-55.4	1-52-26.4	2-25-33.6	2-39-24.7	2-41-0.72
47°	0-59-59.1	1-18-29.0	1-51-50.4	2-26-09.6	2-40-51.1	2-42-48.7
48°	0-58-0.72	1-17-0.72	1-51-13.6	2-26-46.3	2-42-19.4	2-44-39.1
49°	0-56-7.92	1-15-30.4	1-50-36.0	2-27-24.0	2-43-49.6	2-46-31.9
50°	0-54-7.92	1-13-54.4	1-49-56.1	2-28-3.84	2-45-25.6	2-48-31.9
51°	0-52-3.12	1-12-14.6	1-49-14.4	2-28-45.6	2-47-5.52	2-50-36.7
52°	0-49-55.9	1-10-32.1	1-48-31.9	2-29-28.0	2-48-48.0	2-52-43.9
53°	0-47-39.1	1-8-43.44	1-47-46.5	2-30-13.4	2-50-36.7	2-55-0.72
54°	0-45-15.1	1-6-48.24	1-46-58.5	2-31-1.44	2-52-31.9	2-57-24.7
55°	0-42-48.7	1-4-51.12	1-46-09.6	2-31-50.4	2-54-29.0	2-59-51.1
56°	0-40-10.3	1-2-43.68	1-45-16.8	2-32-43.2	2-56-35.7	3-2-29.52
57°	0-37-29.5	1-0-31.92	1-44-21.6	2-33-38.4	2-58-48.4	3-5-10.32
58°	0-34-31.9	0-58-13.6	1-43-24.0	2-34-36.0	3-1-06.48	3-8-7.92
59°	0-31-27.1	0-55-45.8	1-42-22.5	2-35-37.4	3-3-34.32	3-11-12.7
60°	0-28-12.7	0-53-10.3	1-41-17.7	2-36-42.2	3-6-09.84	3-14-27.1

CHAPTER IV

ASTRONOMY-III MISCELLANEOUS

"The movement of creatures are determined by what they have done, be it good or bad, in a former life."

–Ramayana, VI. 119.

"In his new existence, a man's good or evil acts follow him like his shadow, and the consequences thereof make his life either pleasant or painful."

–Mahabharata, III.183. 78.

Sidereal Period

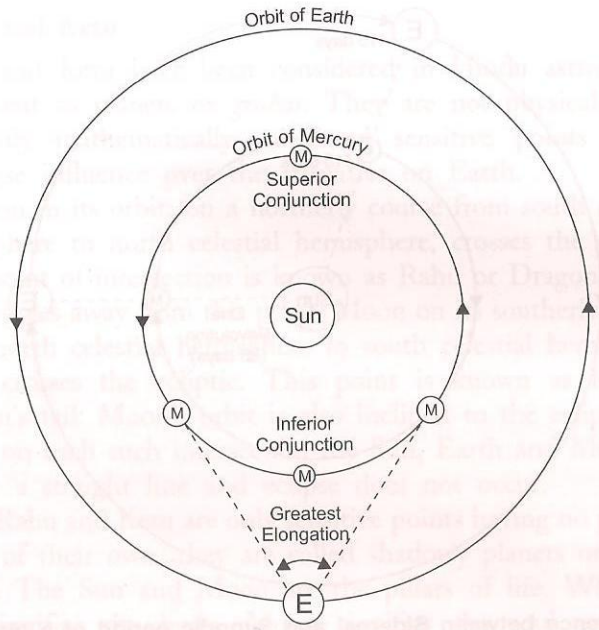
Sidereal period or time is the true time of complete revolution of a planet around the Sun with reference to distant stars.

In case of Moon it is the time taken to complete one revolution around the earth.

Synodic Period

Synodic period is the average time of revolution with reference to the line joining the Earth and the Sun. In other words it is the average time between two successive conjunctions or oppositions. Synodic period of an inferior planet (Mercury or Venus) will be as follows:

In the diagram on the next page, E is the Earth and M is Mercury. Conjunction is when the Earth, Mercury and the Sun are in the same line. It is called superior conjunction when the Sun is between Mercury and the Earth and inferior conjunction when Mercury is in between the Sun and the Earth. At greatest elongation the planet appears to be farthest from the Sun and its latitude is highest.



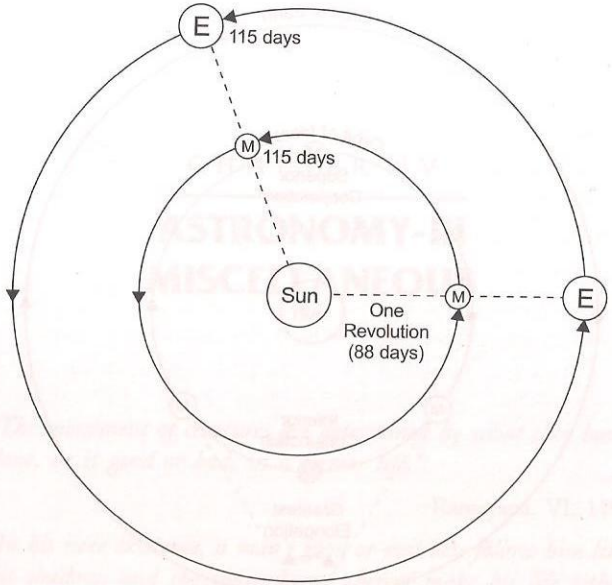
Synodic Period of an Inferior Planet

Synodic period of a superior planet is the time taken between two successive conjunctions or oppositions. A superior planet can never cause an inferior conjunction as it can never come in between the Sun and the Earth. However a superior planet can cause an opposition and it occurs when the Earth comes in between the planet and the Sun.

Inferior conjunction can occur for Mercury and Venus only as their orbits lie in between the orbits of Earth and Sun. At greatest elongation these planets appear to be farthest from Sun. In a horoscope Mercury and Venus can be away from Sun by a maximum of 27° and 47° respectively. Hence in a horoscope Mercury can be maximum one house away from the Sun whereas Venus can be maximum two houses away from the Sun.

Difference between Sidereal and Synodic Periods

To understand the difference let us take the example of Mercury and the Earth. Sidereal period of Mercury is the time taken by it to make a complete revolution relative to a distant star



Difference between Sidereal and Synodic period of a planet

and is 88 days. Whereas the synodic period of Mercury is 115 days i.e. when the successive conjunction occurs.

Starting from the point of conjunction, Mercury takes 88 days to complete one revolution but in the same time the Earth would have moved further. So Mercury must move on so that conjunction takes place which eventually occurs at the end of 115 days. The sidereal and synodic periods of different planets are given below:

Planet	*Sidereal period*	*Synodic period*
Mercury	87.97 days	115.9 days
Venus	224.70 days	583.9 days
Earth	365.25 days	—
Mars	686.98 days	779.9 days
Jupiter	11.86 years	398.9 days
Saturn	29.46 years	378.1 days
Uranus	84.01 years	369.7 days
Neptune	164.79 years	367.5 days

Rahu and Ketu

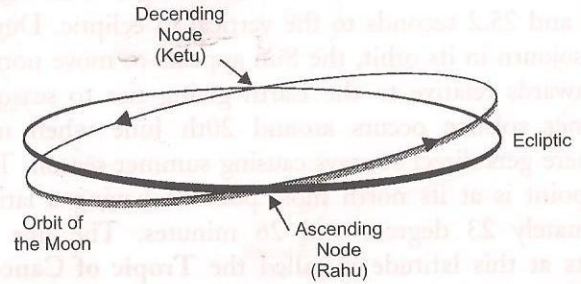
Rahu and Ketu have been considered in Hindu astrology as equivalent to planets or *grahas*. They are not physical bodies but only mathematically calculated sensitive points having immense influence over the nativities on Earth.

Moon in its orbit, on a northerly course from south celestial hemisphere to north celestial hemisphere, crosses the ecliptic. This point of intersection is known as Rahu or Dragon's head. 180 degrees away from this point, Moon on its southerly course, from north celestial hemisphere to south celestial hemisphere, again crosses the ecliptic. This point is known as Ketu or Dragon's tail. Moon's orbit is also inclined to the ecliptic and hence on each such intersection the Sun, Earth and Moon are not in a straight line and eclipse does not occur.

As Rahu and Ketu are only sensitive points having no physical entity of their own, they are called shadowy planets or *chhaya grahas*. The Sun and Moon are the pillars of life. While the Sun signifies the body, Moon signifies the soul or mind. Obviously on these two points of intersection their combined effect is bound to be immense.

At Rahu and Ketu Moon's latitude is zero, as Moon is on ecliptic itself. This intersection point of the orbits of the Sun and the Moon regress along the plane of the ecliptic making a complete rotation every 18.61 years.

Thus Rahu and Ketu are not stationary in space but have a mean motion of about 19 degrees and 30 minutes per year, and take about 18 years and 7 months and 13 days to make a revolution around the Earth. This motion is retrograde. Their mean and true positions can be calculated based on where they



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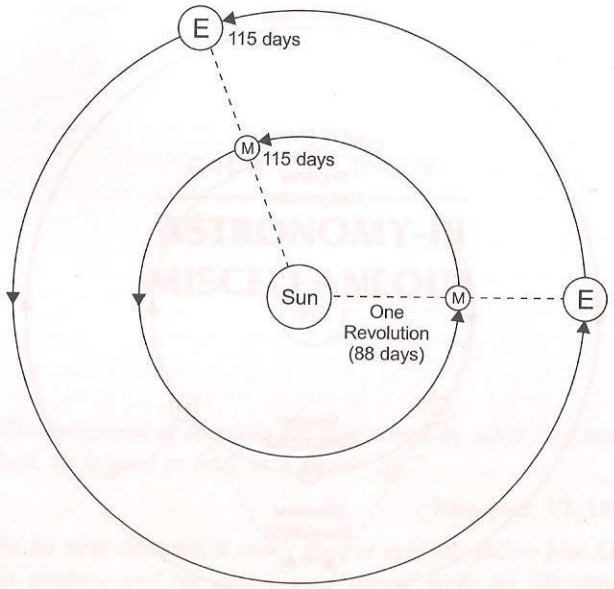

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As Rahu and Ketu are only sensitive points having no physical entity of their own, they are called shadowy planets or *chhaya grahas*. The Sun and Moon are the pillars of life. While the Sun signifies the body, Moon signifies the soul or mind. Obviously on these two points of intersection their combined effect is bound to be immense.

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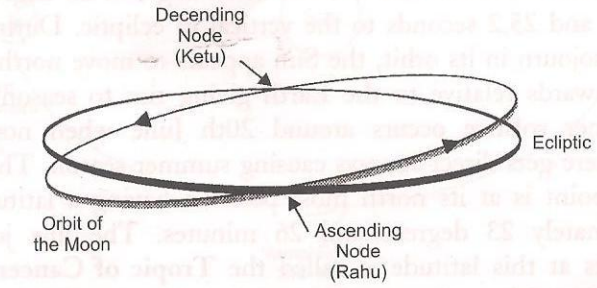


Rahu and Ketu

are situated or where they ought to be if the motion was uniform. In Hindu astrology we take the true position of Rahu and Ketu although controversial viewpoints exist.

Inclination of Planetary orbits

Sun's apparent path is known as ecliptic, which actually is the Earth's orbital path around the Sun. Therefore the Earth's orbit lies in a plane which passes through the Sun. The orbits of all other planets lie in planes which are inclined to the ecliptic at varying angles. If this angle was zero for any planet, its orbit would have been in the same plane as that of the Earth. But because of inclination of the orbits, all planets move above or below the ecliptic. It gives rise to their north or south latitudes.

The average inclination of planetary orbits to ecliptic

Planet	*Degrees*	*Minutes*	*Seconds*
Moon	5	08	43
Mercury	7	00	17
Venus	3	23	40
Mars	1	50	59
Jupiter	1	18	18
Saturn	2	29	16
Uranus	0	46	18
Neptune	1	46	22

The inclination of inferior planets is slightly high as compared to the superior planets which move in a very low inclination.

Inclination of Earth's axis and its significance

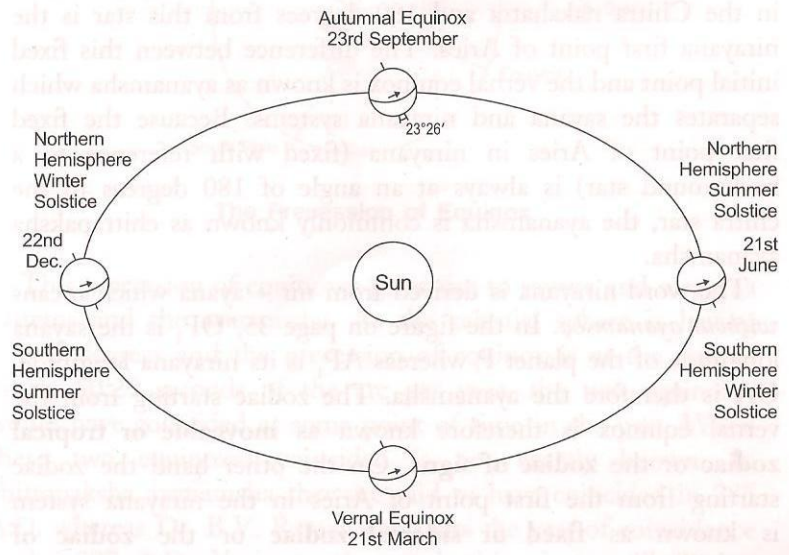
The Earth's rotational axis is tilted at an angle of 23 degrees 26 minutes and 25.2 seconds to the vertical to ecliptic. During the Earth's sojourn in its orbit, the Sun appears to move northwards or southwards relative to the Earth giving rise to seasons.

Summer solstice occurs around 20th June when northern hemisphere gets direct sunrays causing summer season. The Sun at this point is at its north most position having a latitude of approximately 23 degrees and 26 minutes. The line joining all points at this latitude is called the **Tropic of Cancer.** The ancient city of Avantika, now Ujjain which lies near the Tropic of

Cancer was an important centre for astronomical observations and research.

Similarly, around 21st December, at winter solstice southern hemisphere gets direct sunrays causing winters in the northern hemisphere. The Sun at this point is at its south most position having a latitude of approximately 23 degrees 26 minutes south. The line joining all points at this latitude is called the **Tropic of Capricorn.**

Around 20th March and 21st September the Sun appears overhead at the equator causing vernal and autumnal equinox respectively in the present times. Vernal equinox is also known as the first point of sayana Aries and is the reference point for many astronomical and astrological calculations. At winter solstice the Sun turns uttarayana in sayana system which means that it turns northwards. In Hindu astrology however after applying ayanamsha correction (explained later), the Sun becomes uttarayana around 13th January each year in the present era. This coincides with Makar Sankranti or the solar ingress into the Capricorn sign. Similarly around 20th June the Sun turns dakshinayana in sayana system which means that it turns southwards in its sojourn.



Inclination of Earth's axis and its significance

It is interesting to note that the Moon's axial tilt is 1°32'33" as compared to the Earth's axial tilt of 23°26'25.2" to the ecliptic. Therefore the variation of seasons is very less on Moon. Similarly Moon's solar illumination varies much less with seasons as compared to the Earth.

Sayana, Nirayana and Ayanamsha

The vernal equinox or the first point of Aries is the point of intersection of celestial equator with ecliptic where the Sun crosses from south to north. This is the first point of Aries in the sayana system. Sa + ayana means *with ayanamsha*. In the present era the first point of Aries in sayana occurs around 20th March each year.

This point is not fixed and the equinox is moving westwards each year with reference to a fixed star. At the time of the Sun's passage from vernal equinox, the Earth is 50.29 seconds of the arc westwards with reference to a fixed star, than the Earth was at the same equinox in the immediately previous year. This regression of equinox is known as the precession of equinoxes.

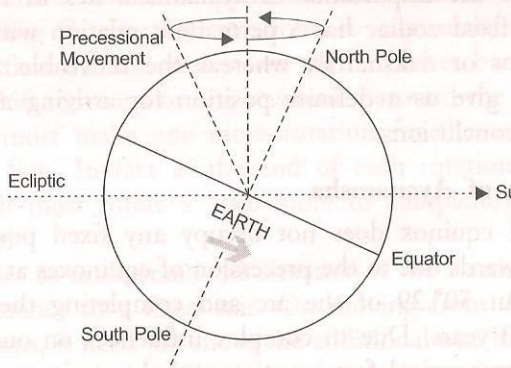
In nirayana system however the first point of Aries is fixed with reference to a background star. This fixed star is Spica in the Chitra nakshatra and 180 degrees from this star is the nirayana first point of Aries. The difference between this fixed initial point and the vernal equinox is known as ayanamsha which separates the sayana and nirayana systems. Because the fixed first point of Aries in nirayana (fixed with reference to a background star) is always at an angle of 180 degrees to the chitra star, the ayanamsha is commonly known as chitrapaksha ayanamsha.

The word nirayana is derived from nir + ayana which means *without ayanamsha*. In the figure on page 35, OP_1 is the sayana longitude of the planet P whereas AP_1 is its nirayana longitude. OA is therefore the ayanamsha. The zodiac starting from the vernal equinox is therefore known as **moveable or tropical zodiac** or the **zodiac of signs**. On the other hand the zodiac starting from the first point of Aries in the nirayana system is known as **fixed or sidereal zodiac** or the **zodiac of constellations**.

Planetary longitudes are measured from the vernal equinox which gives us the sayana position. After applying ayanamsha correction to this, we get the nirayana longitudes. Western astrologers follow the sayana position of planets whereas Hindu astrologers follow the nirayana system.

Precession of Equinoxes

Precession of equinoxes referred to above, can be explained as a wobbly motion of a rapidly spinning body. The Earth is not spherical and is bulged at the equator. The attraction of the Moon and the Sun exerts a gravitational torque which slowly changes the direction of its rotational axis. This produces a circular movement of the celestial pole near the north pole of the ecliptic, resulting in a slow regression of the intersection of celestial equator with the ecliptic. The coordinates of any planet therefore alter with time in the moveable zodiac.



The Precession of Equinox

This precession of equinoxes gives rise to sayana and nirayana systems and the ayanamsha. As the celestial sphere is having 360 degrees and the precession of equinox is at the rate of nearly 50.29 seconds of the arc per year, the two equinoxes would have coincided at some point of time in the past. When these two equinoxes coincided is not exactly known. In chitrapaksha ayanamsha they are said to have coincided in 285 A.D. whereas Dr. B.V. Raman considers the year of coincidence to be 397 A.D. Various other authorities have still further

disagreement on this issue and suggest the year to be 361 A.D., 394 A.D., 498 A.D., 559 A.D. etc.

Considering the above controversial viewpoints the present ayanamsha varies from 21 degrees to 26 degrees approximately. In the absence of any proof in favour of any dates, astrologers follow different ayanamshas. Several efforts to bring them on a single platform for discussion on this issue and on standardisation of *panchangas* (ephemerides) have proved futile so far. However sound researches are required to relate these issues with successful predictions to arrive at an agreement which may be acceptable to the astrologer community.

K.N. Rao, the famous astrologer of international repute has proved through his predictions that chitrapaksha ayanamsha may be used successfully. In his two recent books on Jaimini astrology and Timing Events he has proved it through case studies, thus possibly setting at rest the controversies in this regard. Nevertheless the importance of ayanamsha lies in the fact

that the fixed zodiac has a permanent relation with the star constellations or nakshatras, whereas the moveable zodiac

does not give us a definite position for arriving at accurate predictive conclusions.

Calculation of Ayanamsha

The Vernal equinox does not occupy any fixed position and moves westwards due to the precession of equinoxes at an annual rate of about 50".29 of the arc and completing the circle in about 26000 years. Due to complex influences on our universe and new astronomical facts coming to light, various corrections are needed from time to time. Even *Surya Sidhanta* spoke of *bija corrections* to be applied.

According to new determination of the location of equinoxes the value of Ayanamsha has been revised to 23 degrees and 15 minutes as on 21st March 1956. Therefore any straight line method of calculating ayanamsha from the year 285 A.D. will not give correct results. By adding the yearly rate of precession of 50".29 per year to the corrected value of 23 degrees 15 minutes as on 21st March 1956, we get the present ayanamsha of 24 degrees 00 minutes 56 seconds as on 1st January 2011. For ready reference the table of Chitrapaksha Ayanamsha is given at the end of this chapter for the years 1900 to 2019.

Sidereal Day and Solar Day

The apparent solar day is from one sunrise to the next sunrise. In other words it is the difference between the two successive sunrise times from any location. The mean solar day therefore would be the average length of the day in a year.

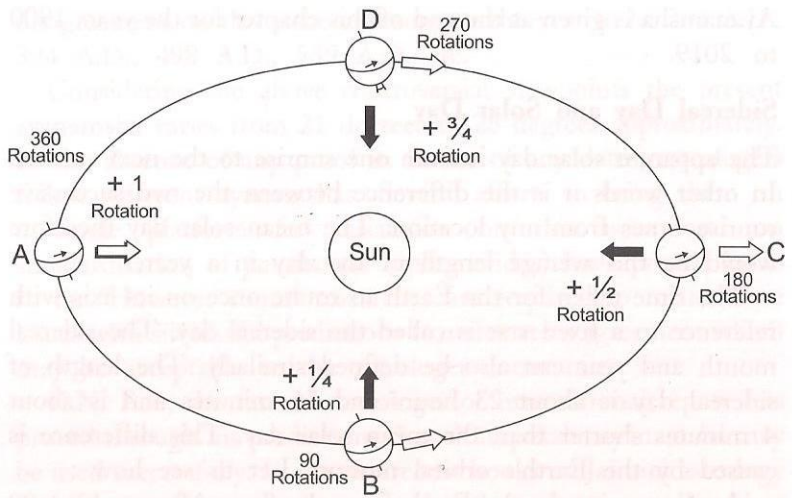
The time taken for the Earth to rotate once on its axis with reference to a fixed star is called the sidereal day. The sidereal month and year can also be defined similarly. The length of sidereal day is about 23 hours and 56 minutes and is about 4 minutes shorter than the mean solar day. This difference is caused by the Earth's orbital motion. Let us see how :

At A, a point on the Earth faces the Sun. After making 90 rotations on reaching B, the Earth must move one fourth rotation more to enable the same point on the Earth to face the Sun. On reaching C, after 180 rotations, it must make half rotation more to face the sun and so on till it reaches back at A after making 360 rotations or one revolution around the Sun. At this point it must make one more rotation for the same point to face the Sun. In fact at the end of each rotation on its axis, the Earth must rotate a little more to complete one apparent solar day.

Now let us understand the situation if the Earth was moving with reference to a fixed star. On moving from A to B, after 90 rotations, it need not move the additional one fourth rotation to face the fixed star. Similarly after 360 rotations, the Earth need not move one more rotation. Thus we understand that the solar day is longer than the sidereal day.

In 360 sidereal days	=	1 additional solar day
	=	or 24 hours more
In one sidereal day	=	24 × 60 ÷ 360
	=	or 4 minutes more.

A sidereal day therefore is shorter than the mean solar day by about 4 minutes. Since we know that a mean solar day is of 24 hours, the sidereal day is of 23 hours and 56 minutes.



Difference between Sidereal Day and Solar Day

As there are 365.25 days in a year and not 360, hence the duration of a sidereal day is 23h 56m 4.091s.

The Earth is rotating on its axis once in a day but for an observer, the celestial sphere is rotating. Thus sidereal time is the local time reckoned according to the apparent rotation of the celestial sphere. In other words whenever time is reckoned with reference to sidereal day, it is called sidereal time. The sidereal time is zero when the first point of Aries in sayana or the vernal equinox crosses the observers meridian. Sidereal time can therefore be defined geometrically as the hour angle of vernal equinox.

Eclipses

An eclipse is the total or partial disappearance of a celestial object behind another. When a celestial body comes within the shadow cast by another body or when the light from one celestial body is obscured by another, an eclipse occurs.

In this interplay of journeys of planets in their orbits when the three heavenly bodies Sun Earth and Moon fall in the same line the eclipses occur. This is called Syzygy. Solar eclipse occurs near a New Moon and lunar eclipse occurs near a Full Moon.

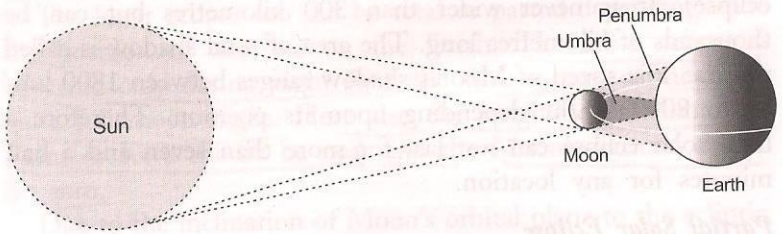
The Sun is our illuminating body around which all the other planets are revolving. Since an eclipse is the temporary obscuring of lustre or brilliance of one's power, the eclipse always occurs when the particular heavenly body is at its best in brilliance and power.

The Solar Eclipse

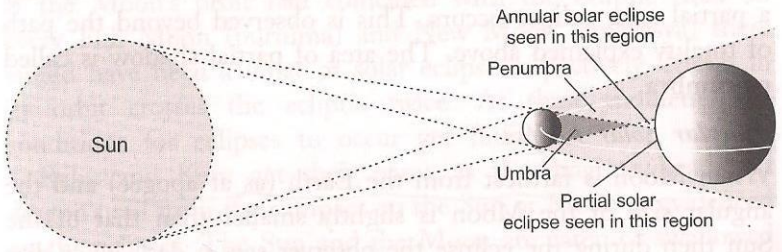
The Sun gets eclipsed on a New Moon day when it is at its best in brilliance. It occurs when the Sun is partially or fully hidden by the Moon. For this eclipse to occur the Moon must come in between the Earth and the Sun and for an observer on the Earth, the Sun gets obscured and will not be visible. The following conditions must be fulfilled for the solar eclipse or *surya grahan* to occur.

1. It must be a New Moon or amavasya.
2. The longitude of Moon must be near Rahu or Ketu.
3. The latitude of Moon should be near zero.

A solar eclipse can occur only on a new moon day when the Moon is weakest (not visible) and Sun at its best in strength and brilliance and this gets eclipsed. Further the longitudes of



Total Solar Eclipse



Annular Solar Eclipse

Moon and Rahu or Ketu must be very near. The latitude of Moon should be near zero and this will happen only when Moon is on or near the ecliptic.

It is a matter of chance that the angular diameter of the discs of Sun and Moon are equal. Therefore the Moon cannot hide the Sun for more than a few minutes. However when Moon is at apogee, its angular size is slightly smaller than that of the Sun. Because at apogee Moon is farthest from Earth and its apprent size is smaller to the observer on Earth. Solar eclipse is of three types.

Total Solar Eclipse

When Moon is at perigee (nearest to the Earth) the disc of the Moon is slightly larger than that of the Sun and for the observer the Moon will completely cover the Sun's disc causing a total solar eclipse. It happens when the angular size of the Moon exceeds that of the Sun (as at perigee) and the line joining their centres intersect the Earth's surface.

As the Earth and Moon are moving in their orbits the point of intersection moves very rapidly across the Earth's surface and sweeps out a narrow band called **path of totality or annularity.** (Depending on whether it is a total solar eclipse or annular solar eclipse). It is never wider than 300 kilometres but can be thousands of kilometres long. The area of total shadow is called **umbra**. The speed of Moon's shadow ranges between 1800 km/hr to 8000 km/hr depending upon its position. Therefore a total solar eclipse can not last for more than seven and a half minutes for any location.

Partial Solar Eclipse

When only a part of Sun's disc is covered by the Moon, only a partial solar eclipse occurs. This is observed beyond the path of totality explained above. The area of partial shadow is called **penumbra**.

Annular Solar Eclipse

When Moon is farthest from the Earth (as at apogee) and the angular size of the Moon is slightly smaller than that of the Sun then during the eclipse the observer sees a dark lunar disc surrounded by a brilliant ring of Sun's light. This spectacle is

known as an annular solar eclipse. A solar eclipse is observed only during day time from the lighted surface of the Earth.

The distance between the Sun and Earth is slowly increasing by about 38 mm. per year. This means that millions of years ago Moon would have completely covered the Sun on total solar eclipse and no annular eclipse was there. It also likewise suggests that millions of years from now there would be only annular solar eclipse and there would be no total solar eclipse. This presumption would be true only if the angular distance of Sun does not change over a period of time.

The Lunar Eclipse

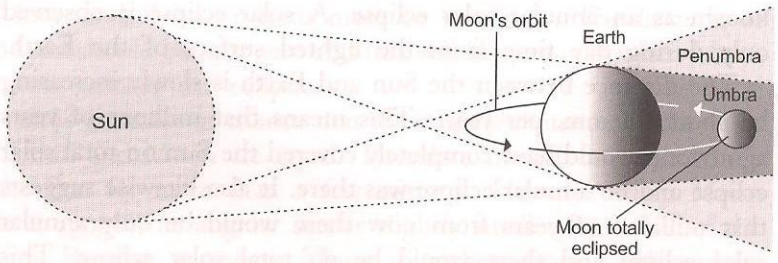
Moon gets eclipsed on a full Moon day when it is at its best caused by Sun's reflected rays. When the Earth comes in between the line of Sun and Moon and the Earth's shadow falls on the lunar surface a lunar eclipse or *chandra grahan* occurs.

The totality of Earth's shadow on the Moon is called umbra and the partial shadow is called penumbra. At the Moon's distance the angular radius of Earth's umbral shadow is two and a half times the Moon's angular diameter. Therefore the period of total lunar eclipse may be a maximum of 1 hour 40 minutes.

The lunar eclipse too can be total or partial depending upon the position of observer on the Earth. The lunar eclipse is observed only during night from the dark surface of the Earth on a full moon night. Here also the longitude of Moon and Rahu or Ketu should be near and the Moon's latitude should be zero.

Due to the inclination of Moon's orbital plane to the ecliptic, eclipses do not occur on every new Moon and full Moon days. If the Moon's orbit had coincided with the ecliptic then on every Full Moon (purnima) and New Moon (amavasya) there would have been a lunar or solar eclipse respectively. Moon in its orbit crosses the ecliptic twice. At these moments the conditions for eclipses to occur get fulfilled.

Rahu and Ketu get their name as the dragon's head and dragon's tail from their impact on the Sun or Moon as evidenced on the eclipses. The Sun and the Moon are eaten or swallowed by Rahu or Ketu on the solar and the lunar eclipse respectively.



Total Lunar Eclipse

For eclipses to occur the latitude of Moon should be near zero and the longitude of Moon should be near that of Rahu or Ketu.

When latitude of Moon is near zero, it will at the ecliptic itself. Rahu and Ketu are nothing but the intersection points of the orbits of Sun and Moon. Even when Moon is at ecliptic with its latitude to be near zero, the longitude of Rahu and Ketu need not be near that of Moon as this intersection point of the orbits of Sun and Moon also has an orbital motion.

It is not necessary that when Moon's latitude is 0 it will lead to an eclipse as its longitude may or may not be near the longitude of Rahu or Ketu. Hence this phenomena of eclipses get its due importance and weightage in Hindu astrology by their relationship with the concept of Rahu and Ketu.

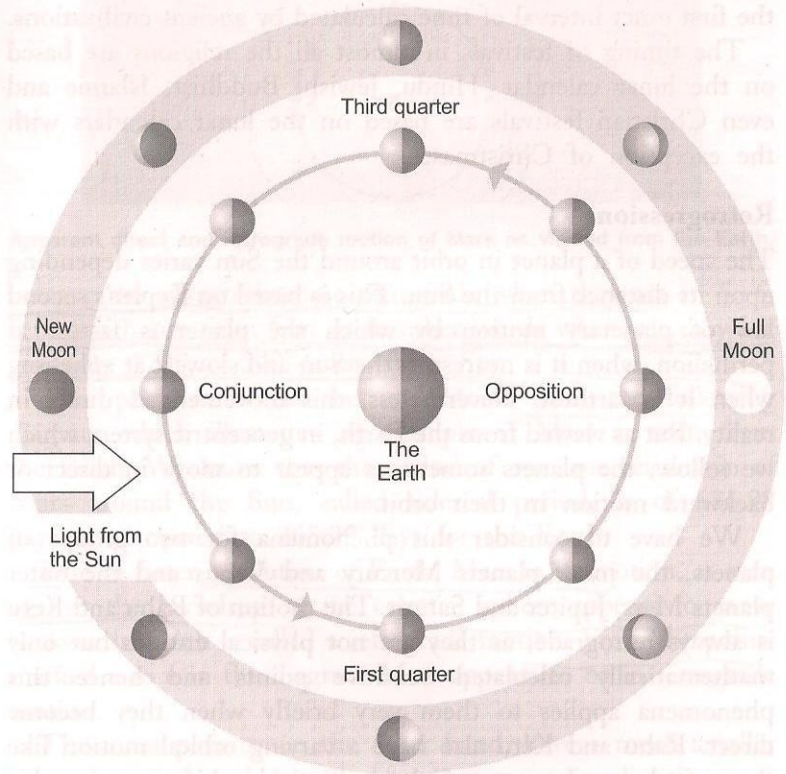
The time of occurrence, duration and circumstances of solar and lunar eclipses depend upon the changing geometry of Earth - Moon - Sun system. After an eclipse the Sun Earth and Moon return to approximately same relative geometry and a nearly identical eclipse occurs. This is called **Saros**. A Saros cycle has a period of 223 synodic months (Approx. 6585.3213 days or nearly 18 years 11 $^1/_3$ days. This can be used to predict the eclipses of Sun and Moon.

The saros cycle has to be understood by the fact that there is a factor of $^1/_{3\,rd}$ day or nearly 8 hours which has its own implications. As a result of Earth's rotation for each successive saros cycle an eclipse will occur 8 hours later in the day. Then the region of visibility will shift westwards by about 120°. Hence an eclipse seen from a point will not be visible from the same point in the next saros cycle. But if you wait for three saros

cycles then the local time of an eclipse will be the same. This will occur after 54 years 1 month or almost 19756 days. This is known as triple saros.

Phases of the Moon

Moon has no light of its own and gets illuminated by the light reflected by Sun's rays. The phase of a celestial body is zero when the observer sees its darkened surface and 100 % when the fully illuminated side of the body is visible. In the context of Moon, full surface is visible on purnima (Full Moon) and it is not visible on amavasya (New Moon). In between these two extremes various phases occur within a lunation (means synodic period).



Phases of the Moon in the outer circle as seen from the Earth

A lunar month is divided into two pakshas called shukla and krishna pakshas. From New Moon to Full Moon is shukla paksha (waxing Moon) and from Full Moon to New Moon is the krishna paksha (waning Moon). When Moon is in opposition its full surface is visible and at other times of its lunation only a fraction is visible. When more than half of Moon's surface is visible it is known as **gibbous**. This occurs from ashtami of shukla paksha to saptami of krishna paksha during which the Moon is considered auspicious in Hindu astrology. Mercury and Venus also show phases similar to the Moon.

The lunar calendar is based on the variation of the phases of Moon as seen from the Earth. The lunar year contains 12 synodic months. A synodic month is the time interval between two new Moons or full Moons. The synodic month was probably the first exact interval of time calculated by ancient civilizations.

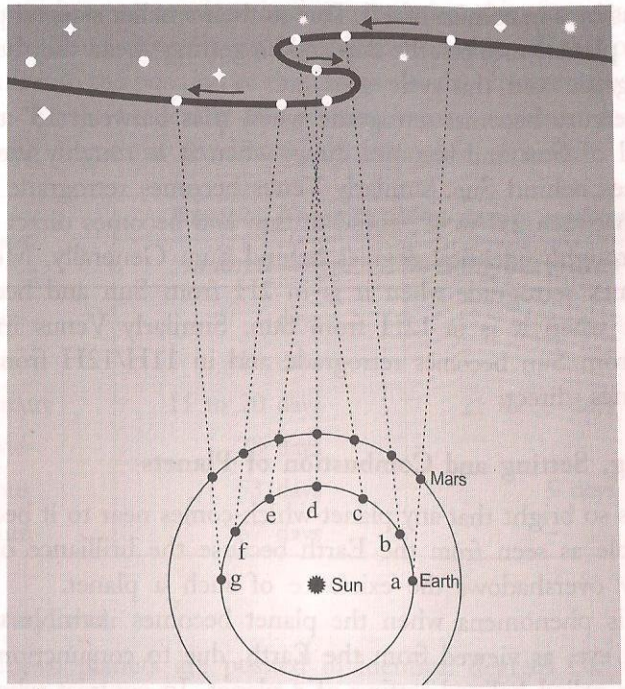
The timing of festivals in almost all the religions are based on the lunar calendar. Hindu, Jewish, Buddhist, Islamic and even Christian festivals are based on the lunar calendars with the exception of Christmas.

Retrogression

The speed of a planet in orbit around the Sun varies depending upon its distance from the Sun. This is based on Kepler's second law of planetary motion by which the planet is fastest at perihelion, when it is nearest to the Sun and slowest at aphelion, when it is farthest. Nevertheless, this movement is direct in reality. But as viewed from the Earth, in geocentric system which we follow, the planets sometimes appear to move in direct or backward motion in their orbit.

We have to consider this phenomena for two groups of planets, the inner planets Mercury and Venus and the outer planets Mars, Jupiter and Saturn. The motion of Rahu and Ketu is always retrograde, as they are not physical entities but only mathematically calculated sensitive points and hence this phenomena applies to them very briefly when they become direct. Rahu and Ketu also have a varying orbital motion like that of planets because of their elliptical orbits.

Mercury and Venus are inner planets and whenever they are ahead of Sun, they become retrograde. Mars Jupiter and Saturn



Apparent direct and retrograde motion of Mars as viewed from the Earth.

being outer planets become retrograde when they are in 5, 6, 7 or 8th house from Sun or in other words whenever they are generally 120° to 240° away from Sun.

This phenomena can be understood from the following diagram which illustrates an example of Mars as seen from the Earth. We know that the period of one true revolution of Mars around the Sun, called sidereal period, is of 686.98 days as compared to 365.25 days for the Earth.

Due to faster revolution of Earth, Mars in its motion, as seen against the backdrop of the celestial sphere appears to move backwards which is called a retrograde motion. From the points marked c to e in the diagram Mars appears to be in retrograde motion.

The inner planets, on the other hand, have a much smaller sidereal period and hence the phenomena is slightly more complex to understand by a diagram. It would suffice to know that Mercury goes away from Sun by a maximum of 27° and

Venus by a maximum of 47°. Due to their smaller sidereal period these planets race past the Sun and on getting ahead they become retrograde and this cycle goes on.

Mercury becomes retrograde when it is between 15° to 27° ahead of Sun and becomes direct when it is roughly identical degrees behind Sun. Similarly Venus becomes retrograde when it is between 27° to 47° ahead of Sun and becomes direct when it is roughly identical degrees behind Sun. Generally, Mercury becomes retrograde when it is in 2H from Sun and becomes direct when it is in 12H from Sun. Similarly Venus in 2H/3H from Sun becomes retrograde and in 11H/12H from Sun becomes direct.

Rising, Setting and Combustion of Planets

Sun is so bright that any planet which comes near to it becomes invisible as seen from the Earth because the brilliance of Sun totally overshadows the existence of such a planet.

This phenomena when the planet becomes invisible to the naked eye, as viewed from the Earth, due to conjunction with Sun is called heliacal setting of a planet. In contrast when the planet again becomes visible, it is known as rising of a planet.

This phenomena of setting of a planet is also called the planet becoming combust. The longitudinal distance between the planet and Sun which makes a planet combust are :

Planet	*Distance from Sun within which planets are combust*	
	in direct motion	*in retrograde motion*
Moon	12°	–
Mars	17°	–
Mercury	14°	12°
Jupiter	11°	–
Venus	10°	8°
Saturn	15°	–

There are, however, divergent viewpoints with regard to the above mentioned degrees in direct or retrograde motion of planets.

Planets become combust in their respective orbits for a specific duration. That depends on the relative position of the planet in relation to the position of the Sun as also the observers position on the Earth. Generally the planets become combust for the following durations in direct and retrograde motion.

Planet	*Duration for which planets remain combust*	
	in direct motion	*in retrograde motion*
Moon	2 days	–
Mars	118 days	–
Mercury	11 to 20 days	21 to 33 days
Jupiter	28 days	–
Venus	53 days	5 days
Saturn	57 days	–

Planetary war

When two planets are posited in identical degrees i.e. within 1° of each other, they are said to be at war. There are various viewpoints as to their effects and victory or defeat in the war. However a planet defeated in war is not able to give results pertaining to its lordship and karakatwas. Generally it is believed that the planet with lesser degrees is the winner in a planetary war.

Chitrapaksha Ayanamsha

This table gives by the chitrapaksha ayanamsha for the years 1900 to 2019 A.D.

Year	*Ayanamsha*			*Year*	*Ayanamsha*			*Year*	*Ayanamsha*		
	°	'	"		°	'	"		°	'	"
1900	22	27	56	1940	23	01	17	1980	23	34	31
1901	22	28	44	1941	23	02	02	1981	23	35	17
1902	22	29	31	1942	23	02	47	1982	23	36	04
1903	22	30	16	1943	23	03	30	1983	23	36	53
1904	22	31	00	1944	23	04	16	1984	23	37	44
1905	22	31	43	1945	23	05	03	1985	23	38	37
1906	22	32	28	1946	23	05	53	1986	23	39	32
1907	22	33	14	1947	23	06	44	1987	23	40	28
1908	22	34	03	1948	23	07	37	1988	23	41	23
1909	22	34	54	1949	23	08	32	1989	23	42	19
1910	22	35	45	1950	23	09	28	1990	23	43	14
1911	22	36	38	1951	23	10	24	1991	23	44	08
1912	22	37	33	1952	23	11	19	1992	23	45	00
1913	22	38	28	1953	23	12	14	1993	23	45	51
1914	22	39	24	1954	23	13	08	1994	23	46	40
1915	22	40	20	1955	23	14	00	1995	23	47	26
1916	22	41	15	1956	23	14	49	1996	23	48	11
1917	22	42	09	1957	23	15	38	1997	23	48	56
1918	22	43	00	1958	23	16	24	1998	23	49	41
1919	22	43	49	1959	23	17	09	1999	23	50	25
1920	22	44	37	1960	23	17	54	2000	23	51	26
1921	22	45	22	1961	23	18	38	2001	23	52	16
1922	22	46	07	1962	23	19	23	2002	23	52	50
1923	22	46	52	1963	23	20	10	2003	23	53	41
1924	22	47	36	1964	23	20	58	2004	23	54	35
1925	22	48	22	1965	23	21	48	2005	23	55	30
1926	22	49	09	1966	23	22	40	2006	23	56	25
1927	22	49	57	1967	23	23	34	2007	23	57	15
1928	22	50	48	1968	23	24	29	2008	23	58	16
1929	22	51	40	1969	23	25	25	2009	23	59	12
1930	22	52	34	1970	23	26	21	2010	24	00	05
1931	22	53	30	1971	23	27	17	2011	24	00	56
1932	22	54	26	1972	23	28	11	2012	24	01	46
1933	22	55	21	1973	23	29	04	2013	24	02	16
1934	22	56	17	1974	23	29	55	2014	24	03	07
1935	22	57	11	1975	23	30	44	2015	24	03	57
1936	22	58	03	1976	23	31	31	2016	24	04	47
1937	22	58	54	1977	23	32	17	2017	24	05	38
1938	22	59	43	1978	23	33	02	2018	24	06	28
1939	23	00	30	1979	23	33	47	2019	24	07	19

CHAPTER V

TIME

"Always do what is right for you to do in the spirit of selflessness, for in doing his duty the selfless man attains to God."

- Bhagwad Gita, III. 19.

Websters Dictionary gives the meaning of time inter alia, as a moment, hour, day or year as indicated or fixed by the clock or calendar. In the modern era the civil time by law or general usage is in hours, minutes and seconds. However this was not so in the ancient days. Even from the prehistoric era, time was probably measured from the position of the Sun in the sky, based on observations. With the result Hindu astrology considers the solar day to be from one sunrise to the next.

Hindu Time Measures

The Hindu division of time is very elaborate and is given below:

1 day or 24 hours	=	60 ghatis
1 ghati	=	60 pala, kala or vighati
1 pala	=	60 vipala, vikala or lipta
1 vipala	=	60 valipta
1 valipta	=	60 para
1 para	=	60 tatpara

All traditional horoscopes were made on the calculations based on ghati-pala-vipala. The duration of one day was divided into 60 ghatis of 24 minutes each. The conversion of ghati-pala into hours-minutes are as follows :

	60 ghatis	=	24 hours
	60 pala	=	24 minutes
	60 vipala	=	24 seconds
or	1 hour	=	2.5 ghatis

1 minute	=	2.5 pala
1 second	=	2.5 vipala

To convert ghati-pala to hours-minutes divide it by 2.5 and to convert hours-minutes to ghati-pala multiply it by 2.5.

Hindu time is further grouped into bigger categories of yugas. There are 4 yugas. Lord Brahma is considered to be the creator of universe and his life (symbolically the life of the universe) is said to be of 1000 Brahma varsha.

1st Yuga (Sat yuga)	=	17,28,000 sidereal years
2nd Yuga (Treta yuga)	=	12,96,000 sidereal years
3rd Yuga (Dwapar yuga)	=	8,64,000 sidereal years
4th Yuga (Kali yuga)*	=	4,32,000 sidereal years
1 Mahayuga (Chatur yuga) (Total of 4 yugas)	=	43,20,000 sidereal years
1 Kalpa**	=	1,000 Mahayuga (43,20,000 × 1000 sidereal years)
1 day of Brahma	=	2 Kalpa (1 day + 1 night)
1 Brahma Varsha	=	360 × 2 = 720 Kalpa
Age of Brahma	=	1,000 Brahma Varsha

* The duration of Kali yuga is 4,32,000 sidereal years. This is the present yuga running and in this 5,113 years have since passed. Hence 4,26,887 years remain. It is believed that Kali yuga started in 3,102 B.C. and accordingly christian era 2011 corresponds to Kali yuga year 5,113.

** In one kalpa Brahma creates 14 Manus who regulate the world. These 14 generations of Manu consists of 71 Maha yugas or chatur yugas. It is believed that the current Manu is the seventh generation and his name is Vaivasvat.

As per ancient classics of Hindu astrology references of the following time measures are also found.

15 Nimesh	=	1 Kashta
30 Kashta	=	1 Kala
30 Kala	=	1 Muhurat
30 Muhurat	=	1 Ahoratri (day + night)
15 Ahoratri (day + night)	=	1 Paksha
2 Paksha	=	1 Maas (month)
2 Saur Maas (Solar Month)	=	1 Ritu (season)
3 Ritu	=	1 Ayan
2 Ayan	=	1 Varsh (year)

Modern Time Measures

The length of an astronomical or tropical year is 365.242 days or 365 days, 5 hours, 48 minutes, 45.2 seconds. A sidereal year (with reference to a fixed background star) is having a duration of 365.256 days or 365 days, 6 hours, 9 minutes, 9.8 seconds. Generally one year has 365 days and it becomes necessary once in four years to add a day to the year making it a leap year having 366 days. The modern division of time is as follows:

60 seconds	=	1 minute
60 minutes	=	1 hour
24 hours	=	1 day
7 days	=	1 week
30 days (commonly)	=	1 calendar month
365 days or 12 months	=	1 year
366 days	=	1 leap year
100 years	=	1 century

Various other measures will be used later in the book for calculation of the horoscope, hence they may be understood here:

60 seconds	(")	=	1 minute	(')
60 minutes	(')	=	1 degree	(°)
30 degrees	(°)	=	1 sign or rashi	
12 rashis or 360 degrees		=	zodiac	

Longitude and Time

1 second of longitude	(")	=	1/15 second of time
1 minute of longitude	(')	=	4 seconds of time
1 degree of longitude	(°)	=	4 minutes of time
15 degrees of longitude		=	1 hour
360 degrees of longitude		=	24 hours

Astronomically, time can be measured with reference to stars as well as the Sun. We have seen this in the previous chapter. Time measured with respect to a fixed star is known as sidereal time. On the other hand the civil time is best derived from the position of the Sun. This too however leads to certain problems in ascertaining the correct time. Solar time depends on various factors like the Earth's rotation on its axis as well as its motion in the orbit. The Earth's orbital motion is dependent on the elliptical nature of the orbit. With the result the movement of

the Earth is not uniform. The inclination of the Earth's axis too creates certain complications in accepting the Sun as a uniform reference point for calculation of time. To obviate this problem a fictitious mean Sun is adopted, moving over the equator and giving us **mean solar time**.

Greenwich Mean Time or Universal Time

A mean solar day is thus equal to 24 hours irrespective of the various factors explained above. The mean solar time on the prime meridian of Greenwich is chosen to be the Greenwich Mean Time (GMT) or the Universal time. Noon at 12.00 Hours GMT occurs when the mean Sun crosses the Greenwich meridian. Almost all countries of the World follow the time which is + or - of GMT.

Ephemeris Time and Dynamical Time

Sidereal as well as Universal time is dependent on the Earth's rotation. On account of friction on the Earth's surface there is retardation in the rotation of the Earth. This leads to a gradual lengthening of the day. There are also other complications of uniformity attached to the Earth's rotation, the explanations of which are beyond the scope of this book.

Accordingly, in 1952 Ephemeris time was introduced. This is a modified solar time which is not dependent on Earth's rotation. Ephemeris time is used to predict the position of heavenly bodies. At present Ephemeris time is about 61 seconds ahead of the Universal time. From 1984 the ephemeris time has been relpalced by what is known as the **Dynamical time**.

Dynamical time is the uniform time time measure now kept by atomic clocks. **Terrestrial Dynamical Time** (TDT) is dynamical time for geocentric phenomena. TDT is independent of the variable rotation of the Earth, and the lengths of the tropical year and synodic month are generally defined in days of 86,400 seconds of international atomic time.

Local Mean Time

The duration of a mean solar day is 24 hours. Whenever the Sun crosses the meridian circle of a particular place, it is local noon for that place. At this moment the hour angle of

the Sun is zero. When the hour angle is 12, it is mid-night for that place having Local Mean Time (LMT) as zero, and the new day commences. Thus LMT is the time elapsed from the mid-night of the place. Let us understand it more elaborately.

The Earth rotates on its axis once in a day in 24 hours or 24 x 60 = 1440 minutes. This rotation is of 360 degrees. Therefore to rotate 1 degree the Earth will take 1440 ÷ 360 = 4 minutes. Due to this rotation on its axis, the Sun appears to rise in the east and set in the west. The eastern parts of the Earth get sunrise earlier and each 1 degree longitude towards the west gradually get the sunrise later, at about 4 minutes interval.

This time difference of 4 minutes per 1 degree longitude is not uniform due to various factors like latitude, tilt of Earth's axis etc. The time of each place therefore will be different and is called the Local Mean Time of that particular place.

Standard Time

The local mean time of all places having different longitudes will be different even within a state, zone or country. If all the places, cities or towns were to follow their own LMT, things would become very difficult and a chaotic situation may arise. What will then be the time followed by the Airlines, Railways, Television etc. To solve this problem a uniform time is chosen either by law or general usage which acts as a standard time for that country.

In India, before 1880 each city followed its own LMT. From 1-1-1880 LMT of Madras became popular which was 5h 20m 50s ahead of GMT. From 1-1-1906 +5:30 Hrs. time zone was adopted for all over India and termed the Indian Standard Time or IST. It relates to 82°30' E meridian or time zone of +5:30 Hrs. ahead of GMT.

Even though all watches show IST in India, the sunrise and sunset will vary according to longitude of the place. The sunrise in the eastern longitudes, say in Assam will be much earlier than in Rajasthan as per IST. But in Hindu astrology it is the concept of LMT which is more important for all calculations.

Zonal Standard Time (ZST) and Time Zone

In bigger countries like the United States of America, the longitudes vary so much across the country that even a single standard time will not serve the purpose. So for the purpose of time, the country is divided into various zones. The standard time for each zone is called the Zonal Standard Time or ZST. In the USA there are four official standards of time, the Eastern, Central, Mountain and Pacific corresponding to the local mean times of 75, 90, 105 and 120 degrees west meridians. Canada has the same divisions with one additional time zone called the Atlantic time corresponding to 60 degrees west meridian.

The standard meridian of any country or any zone in a big country is also called the time zone and is expressed in terms of + or - difference from GMT depending on its longitude towards east or west. As already explained the meridian passing through Greenwich has 0 degrees longitude. The LMT of this 0 degree longitude is called GMT and is the standard reference point for all places on the Earth.

DAYS

1. **Apparent Solar Day :** Is from one midnight to the next. i.e. from 00:00 hours to 24:00 hours. It is longer than the sidereal day by about 4 minutes.
2. **Savana Day :** In Hindu system, apparent solar day is the period of one sunrise to the next and is called a savana day.
3. **Mean Solar Day :** The average of all the days in a year is called mean solar day. Its duration is 24 hours in mean solar time.
4. **Sidereal Day :** A complete rotation of the Earth on its axis with reference to a fixed star is known as sidereal day. Its duration is 23 hours, 56 minutes, 4.091 seconds in mean solar time. It is also called a mean sidereal day.
5. **Nakshatra Day :** In Hindu system a sidereal day is called a nakshatra day and is the time taken from rising of a nakshatra to the rising of the next nakshatra.
6. **Lunar Day :** It is also called a tithi. It is an important concept in Hindu astrology. When Moon gains 12 degrees over that

of the Sun's longitude, one tithi is completed. There are 30 tithis in a lunar month, 1 to 15 in each of the shukla and krishna pakshas. The mean duration of a tithi is 23 hours, 37 minutes, 28.096 seconds.

The tithi is determined at sunrise. Whenever between one sunrise and the next, three tithis occur, there is a kshay tithi or the cancellation of the tithi. Let us take an example. Sunrise is at 5:30 AM and pratipada or the 1st tithi is running. Immediately thereafter say at 5:45 AM the next tithi starts which continues upto 5:20 AM next day before the next sunrise. Hence at the next sunrise the third tithi will be running. In this case the 2nd tithi gets cancelled and is called a kshay tithi. Similarly if one tithi continues for two successive sunrise times, it is called an extra tithi or adhik tithi.

MONTHS

1. **Solar Month:** A solar month is determined on the Sun's entry into a sign or rashi. In the Hindu system there are different rules of determining the beginning of a solar month i.e. the sunrise rule, the sunset rule and the midnight rule etc. In the western astrology it is calculated on the solar ingress into a sign in sayana system. Whereas in Hindu astrology it is calculated on the solar ingress into a rashi in nirayana and is called sankranti. In the present times there is a difference of about 24 days between the two due to ayanamsha.

   The names of the Hindu months based on the sankranti as per Vikrami samvat (solar) starting from 14th January when sun enters the Capricorn sign or Makar sankranti are Magha, Phalgun, Chaitra, Vaishakh, Jyeshtha, Ahsadha, Shravana, Bhadrapad, Ashvina, Kartika, Margasis and Pausha.

2. **Lunar Month:** A lunar month has two pakshas called the shukla paksha and the krishna paksha each having 15 tithis. In shukla paksha (the bright half) tithis are from 1 to 15. The 15th tithi is called purnima or the Full Moon. In krishna paksha (the dark half) tithis are again from 1 to 15. The 15th tithi here is called amavasya or the New Moon. Two types of lunar months are followed :

a) ***The New Moon ending lunar month*** covering the period from one New Moon to the next. It is called Shukladi or Amanta (derived from amavasya + anta). It is followed in Gujarat, Maharashtra and Andhra Pradesh etc.

b) ***The Full Moon ending lunar month*** covering the period from one Full Moon to the next. It is called Krishnadi or Purnimanta (derived from purnima + anta). It is followed in Madhya Pradesh, Uttar Pradesh, Bihar, Punjab, Delhi and Rajasthan etc.

In these systems the naming of months in the shukla paksha are the same but in krishna paksha the name of next month is denoted. For example Chaitra shukla in shukladi system is called chaitra sudi in krishnadi system. But Chaitra krishna in shukladi system is called Vaishakha badi in krishnadi system and so on. The names of the Hindu lunar months are the same as given above under Vikrami (solar) months. The length of a lunar month is 29 days, 12 hours, 44 minutes, 2.9 seconds.

The names of Hindu months are based on the nakshatra in which the Moon is placed on the day of purnima or the full moon. For example if there is chitra nakshatra on full moon, the month is called chaitra and so on. The names of the Vedic months as prevalent during the vedic times and the present Hindu months are as follows:

Vedic months	*Hindu months*	*Vedic months*	*Hindu months*
1. Madhu	Chaitra	7. Isha	Ashvin
2. Madhav	Vaishakha	8. Urja	Kartik
3. Shukra	Jyeshtha	9. Seha	Margashish
4. Shuchi	Ashadha	10. Sahasya	Pausha
5. Nabha	Sravana	11. Tapa	Magha
6. Nabhas	Bhadrapad	12. Tapasya	Phalguna

3. **Nakshatra month :** The period taken by the Moon to move from Aswini to Revati nakshatra or in other words the period it takes to traverse all the 27 nakshatras once, is called the nakshatra month. The duration of a nakshatra month is about 27 days.

4. **Savana month :** The period of 30 savana days is called one savana month.

5. **Anomalistic Month :** The time taken by the Moon to move from one perigee to the next is called anomalistic month. Its duration is 27 days, 13 hours, 18 minutes, 33.1 seconds.

6. **Nodical Month :** When the Moon moves from one ascending node to the next ascending node (can also be from one descending node to the next) the period is known as a nodical month. Its duration is equivalent to 27 days, 5 hours, 5 minutes, 35.9 seconds. It is slightly smaller than the sidereal month because the Rahu has also moved backwards during this period. Nodical month is also called **draconic month** because it was believed that the dragon swallows the Moon and the Sun, to cause eclipses.

7. **Sidereal Month :** The time taken by the Moon to rotate once around the Earth with respect to a background star is known as the sidereal month. Its duration is 27 days, 7 hours, 43 minutes, 11.6 seconds.

8. **Synodic Month :** It is the time interval between the two successive similar positions between the Sun, the Moon and the Earth. It is also called lunation and the present duration of mean synodic month is 29 days, 12 hours, 44 minutes, 2.9 seconds.

9. **Tropical Month :** The duration of time between two successive passages of the Moon through the vernal equinox is called a tropical month. The present duration of tropical month is 27 days, 7 hours, 43 minutes, 4.7 seconds.

The comparative duration of some of the months is given in the table.

Months	*Days*	*Hours*	*Minutes*	*Seconds*
Lunar	29	12	44	2.9
Synodic	29	12	44	2.9
Tropical	27	07	43	4.7
Sidereal	27	07	43	11.6
Anomalistic	27	13	18	33.1
Nodical	27	05	05	35.9

YEARS

1. **Sidereal Year :** The period taken by the Earth to make a revolution once in its orbit with reference to a fixed background star is known as a sidereal year. The duration of a sidereal year is 365 days, 6 hours, 9 minutes, 9.8 seconds.
2. **Tropical Year :** The period taken by the Sun from one vernal equinox to the next vernal equinox is known as a tropical year. The duration of a tropical year is 365 days, 5 hours, 48 minutes, 45.2 seconds. As the vernal equinox receeds westwards by 50".29 every year, the Sun has to travel so much lesser to reach the vernal equinox point every year and hence the duration the the tropical year is samller than the sidereal year.
3. **Anomalistic Year:** The mean interval between the two successive perihelions of the Earth is known as Anomalistic year.
4. **Solar Year :** The period when the Sun travels from beginning of Aries to end of Pisces is called the Solar year.
5. **Savana Year :** It is the year containing 360 days of 12 calendar months consisting of 30 days each.
6. **Nakshatra Year :** The duration of a year containing 12 nakshatra months is equal to a nakshatra year. The duration of one nakshatra month of about 27 x 12 = 324 mean solar days is called a nakshatra year.
7. **Lunar Year :** The duration of 12 synodic months is equal to one lunar year. A lunar month is from 1st tithi of shukla paksha to amavasya. Such 12 lunar months denote a lunar year. Similarly the 12 lunar months starting from 1st tithi of krishna paksha to purnima is also a lunar year. However shukladi lunar month system is more prevalent. Lunar year begins from chaitra shukla pratipada or the first tithi in shukla paksha of the chaitra month. The duration of a lunar year is 29.53 x 12 = 354.37 days approx.

8. **Luni-Solar Year :** It is a system of combination of solar year and lunar months. The duration of a lunar year is about 354.37 days which is eleven days less than the normal solar year. A true lunar calendar therefore becomes out of step with seasons and is therefore replaced by a luni-solar year in which every 3rd or 4th year there are 13 lunar months. Thus a leap month is added.

   A lunar month which is devoid of any sankranti is known as adhik maas. Thus in whichever solar month two amavasyas occur, there will be two lunar months of the same name. This is based on the nakshatra in which the Moon is placed on the day of purnima or the Full Moon. This leads to 13 lunar months in a year or what is called as adhik maas or one additional month.

   As we have seen that in a lunar year of 12 months there are 354 days, to adjust the number of days with the solar year the concept of adhik maas and kshay maas comes into picture. A lunar month in which two sankrantis occur is known as kshay maas.
9. **Eclipse Year :** It is defined as the successive passage of the Sun through the same node of the Moon's orbit. It is also known as the **draconian year** or the **year of dragons**.
10. **Jovian Year :** It is also known as the **Brihaspatya varsha** or the year based on the planet Jupiter. It is the period in which Jupiter stays in one sign.
11. **Julian Year :** It was introduced by Julius Ceaser in 46 B.C. and was modified under Augustus. In this an ordinary year has 365 days and every fourth year has 366 days. This year was 11 minutes and 10 seconds longer and errors had accumulated. It was superseded by the Gregorian year.
12. **Gregorian Year :** The modified system in which the errors of Julian year were removed. It was introduced by Pope Gregory XIII in 1582 and is now in use throughout the

world. It was adopted by Great Britain in 1752 by suppressing 11 days of accumulated error of the Julian year.

The comparative duration of some of the years is given in the table.

Years	*Days*	*Hours*	*Minutes*	*Seconds*
Synodic	365	05	48	45.2
Tropical	365	05	48	45.2
Sidereal	365	06	09	9.8
Lunar	354	08	48	46.1
Anomalistic	365	06	13	52.5
Julian	365	06	00	00.0
Eclipse	346	14	52	54.7

Other Eras

Various eras have been in vogue. But in the present times the **Christian Era** has assumed importance. The christian era was introduced in 525 AD in which the counting of years was dated back to the birth of the christ. The other calendars or eras prevalent in India are given below and their difference from the christian era is also being mentioned for better understanding.

Era	*Year in 2011*	*From Christian Era*	*Begins*
1. Shaka (National)	1933	- 78 years	Solar ingress in sayana Aries
2. Shaka (Lunar)	1933	- 78 years	Chaitra shukla pratipada
3. Shaka (Solar)	1933	- 78 years	Solar ingress in nirayana Aries
4. Vikrami (Solar)	2068	+ 57 years	Solar ingress in nirayana Aries
5. Vikrami (Chaitradi)	2068	+ 57 years	Chaitra shukla pratipada
Era	*Year in 2011*	*From Christian Era*	*Begins*
6. Vikrami (Kartikadi)	2068	+ 57 years	Kartika shukla pratipada
7. Islamic (Hejira)	1428	- 579 years	Moharram 1st
8. Budha Nirvana	2555	+ 544 years	Vaishakha shukla 15 (Purnima)
9. Mahavira Nirvana	2538	+ 527 years	Kartika shukla pratipada

AYANAS

There are two ayanas. The first ayana is uttarayana when the Sun starts its northernly course at winter solstice from the Tropic of Capricorn. The second ayana is dakshinayana when the Sun starts its southerly course at summer solstice from the Tropic of Cancer.

The period when the Sun is transiting the signs of Capricorn to Gemini is known as the period of uttarayana Sun. The period in which the Sun is transiting the signs of Cancer to Sagittarius is known as dakshinayana Sun.

The Hindu seasons called *ritus* are also related to the ayanas. The ritus of shishir (winter), basant (spring) and grishma (summer) occur during uttarayana. This period is also called the day of Gods. The remaining three ritus of varsha (rains), sharad (autumn) and hemant (winter) occur during dakshinayana. This period is also called the night of Gods. As per Hindu astrology Uttarayana is considered very auspicious for performing *shodas sanskaras* or the 16 rituals or ceremonies. The ritus as explained above occur during the sayana transit of the Sun in two signs each, as follows:

Sun's transit in signs			*Ritu (Season)*		
Capricorn	and	Aquarius	Shishir	or	winter season
Pisces	and	Aries	Basant	or	spring season
Taurus	and	Gemini	Grishma	or	summer season
Cancer	and	Leo	Varsha	or	rainy season
Virgo	and	Libra	Sharad	or	autumn season
Scorpio	and	Sagittarius	Hemant	or	winter season

CHAPTER VI

THE HOROSCOPE

"A person should never do to others what he does not like others to do to him, knowing how painful it is to himself."

– Mahabharata, XII. 259

The word horoscope is derived from *horoscopos*, a combination of two words Hora + scopos. Hora signifies the hour and scopos the watcher. Horoscope is the chart of heavens or a diagram in which the scheme of twelve houses of the heavens is depicted. It shows the signs of the zodiac and the relative position of planets and nakshatras posited in them. This map of the heavens is required for the precise moment of birth of a child or for that matter any incident, thought or query (prashna).

The Ascendant

The Earth is moving on its axis from west to east so that the entire zodiac with planets and nakshatras located in it appear to rise in the east and set in the west. All the twelve signs or rashis of the zodiac appear one by one in the eastern horizon and get a chance to rise once in 24 hours. The sign which is rising in the eastern horizon at the moment of birth, event or prashna is called the ascendant or lagna.

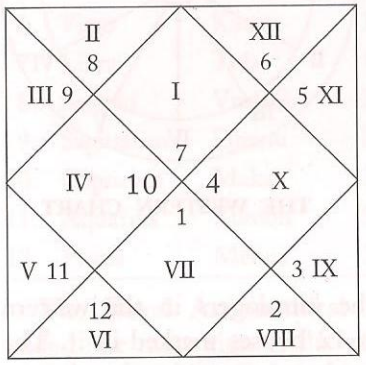
The starting point of any horoscope is this ascendant which coincides with the first house of the horoscope. The remaining signs are placed in the subsequent houses in order of signs in the zodiac. The period of ascension of signs called rashimaans is not equal and depends on the latitude. The rashimaans for latitudes of 0 to 60 degrees are given in chapter III.

Forms of Horoscopes

There are various forms of horoscope charts in vogue in different parts of the country and abroad, which may be different in their form but distinctly similar in their character. Some of them are described below for their formation and contents. Each one of them has their distinct advantage.

1. The North Indian Chart

The chart has 12 houses marked I to XII in the diagram. The ascendant is always in the first house at the top and the order of signs follow the anti clock wise direction. In this case the ascendant is Libra the 7th sign of the zodiac and the second house has 8th sign Scorpio and so on.



THE NORTH INDIAN CHART

Pisces Meena	Aries Mesha	Taurus Vrishabh	Gemini Mithun
Aquarius Kumbh			Cancer Karka
Capricorn Makar			Leo Simha
Saggitarius Dhanu	Scorpio Vrischik	Libra Tula	Virgo Kanya

THE SOUTH INDIAN CHART

In this chart the houses are fixed but the signs vary depending upon the ascendant. The signs are written as 1 to 12. The house numbers I to XII shown in the diagram are generally not written in the horoscope as they are fixed.

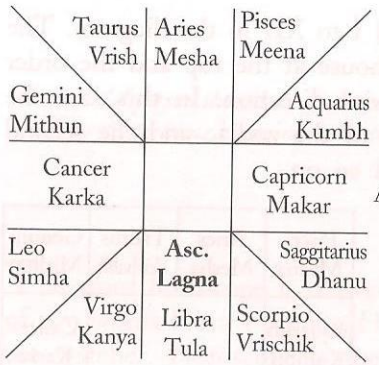
2. The South Indian Chart

In this type of chart which is mostly followed in the southern states of India, the rashis are fixed (as mentioned in the chart) but houses vary depending onthe ascendant or lagna. The ascendant is marked as two traverse lines marked //.

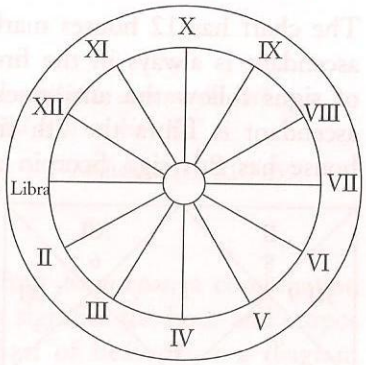
The ascendant becomes the first house and the remaining houses appear in the clock wise order. In this case as rashis are fixed their number is not written in the chart.

3. The East Indian Chart

This chart is used in the eastern states of India e.g. Bengal, Bihar etc. It is a combination of the north Indian and the south Indian charts in which the rashis are fixed and the counting is done in anticlock wise order. In the diagram the ascendant again is Libra, which corresponds with the first house. The 7th house has Aries, the 10th house has Cancer and so on.



THE EAST INDIAN CHART



THE WESTERN CHART

4. The Western Chart

This type of chart is used by the astrologers in the western countries. It is a round chart with 12 houses marked in it. The cusp of the first house or the ascendant is considered to be the beginning of the first house whereas in Hindu astrology the cusp of the first house is considered the middle of the first house or the bhava madhya. This is the essential difference between the two.

In the diagram the ascendant is Libra which is the beginning of first house and the counting of houses (as well as the signs in it) is done in the anti clockwise order.

The Signs or Rashis

The zodiac or *bhachakra* consists of 360 degrees divided into 12 signs of 30 degrees each. The signs of zodiac, their Hindu equivalent names, their extent of degrees, the lordship of each sign and the symbol of each sign is given in the table. Rahu and Ketu have not been given any lordship as they are shadowy

planets whereas the Sun and the Moon are the lords of one sign each i.e. Leo and Cancer respectively. All other planets have dual lordship in a definite order of their increasing distance from the Sun (Leo) and the Moon (Cancer) respectively. See the South Indian chart on previous page for the understanding of this concept.

No.	*Sign*	*Rashi*	*Extent in degrees*	*Lordship*	*Symbol*
1.	Aries	Mesha	0 to 30	Mars	♈
2.	Taurus	Vrishabh	30 to 60	Venus	♉
3.	Gemini	Mithun	60 to 90	Mercury	♊
4.	Cancer	Karka	90 to 120	Moon	♋
5.	Leo	Simha	120 to 150	Sun	♌
6.	Virgo	Kanya	150 to 180	Mercury	♍
7.	Libra	Tula	180 to 210	Venus	♎
8.	Scorpio	Vrischik	210 to 240	Mars	♏
9.	Sagittarius	Dhanu	240 to 270	Jupiter	♐
10.	Capricorn	Makar	270 to 300	Saturn	♑
11.	Aquarius	Kumbh	300 to 330	Saturn	♒
12.	Pisces	Meena	330 to 360	Jupiter	♓

The Royal Astronomical Society of England has recently added one more sign to the existing 12 signs of the zodiac. This new sign is Ophiuchus, and in the western system it lies between Scorpio and Sagittarius (between November 30 and December 17). This new discovery can best be considered as an astronomical discovery and not an astrological one. It may affect the western astrology which follows the Sun signs and does not affect the Hindu astrology which is quite distinct by way of its several unique features. Hindu astrology has stood the test of time and even western astrologers are drawn towards it because of its remarkable predictive versatility.

Planets

As explained earliar we consider the following nine planets in Hindu astrology. Although Sun and Moon are not planets, we consider them so and exclude Uranus, Neptune and Pluto from our analysis due to their vast distances from the Earth. We,

however, consider Rahu and Ketu, the two mathematically calculated sensitive points, as planets, making the total number of planets to be nine. These are as follows :

Planet	*Hindi Name*	*Lordship of Signs*	*Symbol*
Sun	Surya or Ravi	Leo	
Moon	Chandra	Cancer	
Mars	Mangal or Kuja	Aries and Scorpio	
Mercury	Budha	Gemini and Virgo	
Jupiter	Brihaspati or Guru	Sagittarius and Pisces	
Venus	Shukra	Taurus and Libra	
Saturn	Shani	Capricorn and Aquarius	
Rahu (Dragons head)		Virgo	
Ketu (Dragons tail)		Pisces	

Nakshatras or Constellations

Hindu astrology further divides the zodiac in another way. The 360 degrees of the zodiac is divided into 27 nakshatras or constellations having an extent of 13 degrees and 20 minutes each. A nakshatra is a group of stars and the name of the nakshatra is based on one of the prominent identifying star in the group. The names of the nakshatras, their extent in longitude as well as in the rashis, their lordship and the number of years allotted in the Vimshottari dasha is given in the table.

Sl. No.	*Nakshatra*	*Extent longitude from*	*to*	*Extent in Signs*	*Lord*	*No. yrs.*
1.	Ashwini	00-00	13-20	Ari 0°00' to Ari 13°20'	Ketu	7
2.	Bharani	13-20	26-40	Ari 13°20' to Ari 26°40'	Venus	20
3.	Krittika	26-40	40-00	Ari 26°40' to Tau 10°00'	Sun	6
4.	Rohini	40-00	53-20	Tau 10°00' to Tau 23°20'	Moon	10
5.	Mrigshira	53-20	66-40	Tau 23°20' to Gem 6°40'	Mars	7
6.	Ardra	66-40	80-00	Gem 6°40' to Gem 20°00'	Rahu	18
7.	Punarvasu	80-00	93-20	Gem 20°00' to Can 3°20'	Jupiter	16
8.	Pushya	93-20	106-40	Can 3°20' to Can 16°40'	Saturn	19
9.	Ashlesha	106-40	120-00	Can 16°40' to Can 30°00'	Mercury	17
	Total cycle of vimshottari dasha in years 120					

Sl. No.	*Nakshatra*	*Extent longitude from*	*to*	*Extent in Signs*	*Lord*	*No. yrs.*
10.	Magha	120-00	133-20	Leo 0°00' to Leo 13°20'	Ketu	7
11.	Purv Phalguni	133-20	146-40	Leo 13°20' to Leo 26°40'	Venus	20
12.	Uttar Phalguni	146-40	160-00	Leo 26°40' to Vir 10°00'	Sun	6
13.	Hasta	160-00	173-20	Vir 10°00' to Vir 23°20'	Moon	10
14.	Chitra	173-20	186-40	Vir 23°20' to Lib 6°40'	Mars	7
15.	Svati	186-40	200-00	Lib 6°40' to Lib 20°00'	Rahu	18
16.	Vishakha	200-00	213-20	Lib 20°00' to Sco 3°20'	Jupiter	16
17.	Anuradha	213-20	226-40	Sco 3°20' to Sco 16°40'	Saturn	19
18.	Jyeshtha	226-40	240-00	Sco 16°40' to Sco 30°00'	Mercury	17
	Total cycle of vimshottari dasha in years 120					
19.	Moola	240-00	253-20	Sag 0°00' to Sag 13°20'	Ketu	7
20.	Purv Ashadha	253-20	266-40	Sag 13°20' to Sag 26°40'	Venus	20
21.	Uttar Ashadha	266-40	280-00	Sag 26°40' to Cap 10°00'	Sun	6
22.	Shravana	280-00	293-20	Cap 10°00' to Cap 23°20'	Moon	10
23.	Dhanishta	293-20	306-40	Cap 23°20' to Aqu 6°40'	Mars	7
24.	Shatbhisha	306-40	320-00	Aqu 6°40' to Aqu 20°00'	Rahu	18
25.	Purv Bhadrapad	320-00	333-20	Aqu 20°00' to Pis 3°20'	Jupiter	16
26.	Uttar Bhadrapad	333-20	346-40	Pis 3°20' to Pis 16°40'	Saturn	19
27.	Revati	346-00	360-00	Pis 16°40' to Pis 30°00'	Mercury	17
	Total cycle of vimshottari dasha in years 120					

केतु - 7
शुक्र - 20
सूर्य - 6
चंद्र - 10
मंगल - 7
राहु - 18
बृहस्पति - 16
शनि - 19
बुध - 17

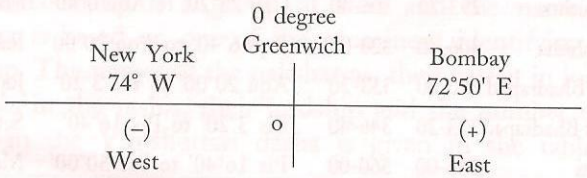
CHAPTER VII

CONVERSION OF TIME

"Above senses there is the mind, and above mind there is the intellect, and the one which lies above all of them is the soul within, supremely powerful and yet subtle."

– Bhagwad Gita III. 42.

At all places situated towards east of 0 degrees meridian, the Sun will rise earlier and the time is added (+), and at all places situated west of 0 degrees meridian the Sun will rise later and time is subtracted (-). Let us understand it in the following diagram.



In this diagram the Earth's equator is straightened out and 0 lies at 0 degrees longitude. Bombay is situated at 72°50' east longitude and New York at 74° west longitude. If the LMT of New York is given and the LMT of Bombay is to be calculated, we have to add or (+) the difference to LMT of New York. Conversely to find the LMT of New York we have to subtract or (-) the difference from LMT of Bombay.

We have already learnt that 1 degree of longitude is equivalent to 4 minutes of time. We have also learnt about the time zones as well as the concept of terrestrial longitudes. Now we will proceed to calculate some examples of conversion of time, time zone, standard meridians etc. As we proceed, we will also require to refer to certain books for our calculations in casting of horoscopes etc. These books are as follows :

1. ***The Table of Ascendants*** : This book is written by N.C. Lahiri and published by Astro-Research Bureau Calcutta. For the purpose of casting of horoscope by modern method it is essential to use the Table of Ascendants.

2. ***The Indian Ephemeris*** : Several ephemerides and panchangas are available inthe country. We will however be using the ephemerides of N.C. Lahiri published as *The Indian Ephemeris.* Condensed and yearly versions are available. It is essential to have a full set of the same.

Example 1 : Find the standard meridian of India if the time zone is + 5:30 hrs.

(a) As the time zone is (+), we know that the place is located east of Greenwich.

(b) We know that 4 minutes of time = 1° longitude
5:30 hrs of time = 5 × 60 = 300
+30 = 330
Hence 330 minutes of time = 330÷4
= 82.50
or = 82°30' E

Example 2 : The longitude of standard meridian of Sydney in Australia is 150° E. Find the time zone.

(a) As the longitude of standard meridian is 150° East, this means that the place is situated towards east of Greenwich.

Thus the time zone will be (+)

(b) We know that 1° longitude = 4 min. of time
150° longitude will be = 150×4 = 600 minutes
= 10 hours.

As the place is situated east of Greenwich, the time zone will be + 10 hrs.

Example 3 : Find the standard meridian of Peru if the time zone is (-) 5:00 hrs.

(a) The time zone is (-) hence the place lies west of Greenwich.

(b) We know that 4 minutes of time = 1° longitude.
5:00 hours or 300 minutes = 300÷4
= 75° West.

Example 4 : Find the time zone of a country if its standard meridian is 90° West.

(a) Since the place lies towards west of Greenwich, the time zone will be (-).

(b) As 1° longitude = 4 min. of time
hence 90° longitude = 90 × 4
= 360 minutes or 6:00 hrs.
Time zone = (-) 6:00 Hrs.

LMT Correction

As already explained the LMT of every place depends upon the longitude of the place. Every 1° of longitude is equal to 4 minutes of time. We have to convert the standard time of the country or zone into LMT of the place which involves the following steps.

1. Find out the standard meridian of the country from Indian Ephemeris or The Table of Ascendants. If the same is not readily available, then arrive at the same from the time zone of the country as explained above in the examples.

2. Note the longitude of the place as so many degrees east or west for which LMT or LMT correction is required.

3. Multiply the difference between these two longitudes in degrees and minutes by 4, which will give the LMT correction in minutes and seconds respectively.

4. Add (+) this correction if the place lies East of the standard meridian/zone or subtract (-) this correction if this place lies West of the standard meridian/zone, to the standard time of the epoch.

5. To convert the LMT to standard time, reverse the signs (+) or (-).

Example 5 : A child is born at 8:00 AM IST at Delhi. Find the LMT of birth.

(a) Longitude of standard meridian = 82°30' E
Longitude of Delhi = 77°13' E

(b) Difference in longitude = 5°17'

(c) Multiplying the difference of 5°17' by 4
5 × 4 = 20 minutes
17 × 4 = 68 seconds
or = 21^{m} 08^{s}

(d) As the longitude of Delhi is towards west of standard meridian of India, the time will be subtracted.

8 :00 :00
(-) 21 :08
LMT of birth 7 :38 :52 AM.

Example 6 : If a native is born at Bombay at 14:30 hrs LMT, find the IST of birth.

(a) Longitude of standard meridian = 82°30' E
Longitude of Bombay (Birth place) = 72°50' E

(b) Difference in longitude = 9°40'

(c) Multiplying the difference by 4

	9°	40'
×	4	4
	36 min.	160 sec.
or	38 min.	40 sec.

(d) Bombay lies west of standard meridian. But here we have to find out the IST from LMT, hence we have to say that the standard meridian lies east of Bombay and the time will be added.

(e) LMT of birth = 14 :30 : 00 hrs
Add correction (+) = 38 : 40
IST of birth = 15 :08 : 40 hrs
or 15 hrs, 8 minutes, 40 seconds.

Example 7 : If in India the time is 10:30 AM IST, what will be the time in London in GMT.

(a) Long. of standard meridian of India = 82°30' E
Long. of meridian of Greenwich = 0°00'

(b) Difference between the longitudes = 82°30'

(c) Multiplying the difference by 4 because 1° of longitude is equal to 4 minutes of time.

	82	30
×	4	4
	328^{m}	120^{s}

or 330 minutes or 5 hrs 30 minutes.

(d) GMT lies towards west of standard meridian of India, hence the time difference will be subtracted.

IST 10 : 30 AM
subtract (-) 5 : 30
GMT 5 : 00 AM on the same day

Example 8 : If it is 22:30 hrs. LMT on 14th February 1995 at New York, what will be the corresponding LMT at Sydney.

(a) Longitude of Sydney = 151° 12' E
Longitude of New York = 74° 00' W
(b) Difference between the two = 225° 12'

We add the longitudes here because one place lies in the east of Greenwich and the other in the west of Greenwich.

(c) Time difference, multiplying by 4

	225°	12'
×	4	4
	900^m	48^s

or 15 hrs, 0 min, 48 sec.

(d) Sydney is towards east of New York hence the time will be added.

LMT at New York on 14-2-1995	=	22 : 30 : 00
add LMT correction	(+)	15 : 00 : 48
	=	37 : 30 : 48
	(-)	24 : 00 : 00
	=	13 : 30 : 48

Here we have subtracted 24 hrs, as the total is more than 24 hrs. This means that the date has changed.

LMT at Sydney 13 hrs, 30 min, 48 sec.
on 15th February 1995

Check : From Table of Ascendants

New York	IST from ZST	+ 10 : 30
	LMT from ZST	+ 0 : 04
∴ IST from LMT of New York		+ 10 : 26

Here 4 minutes are subtracted because New York lies east of ZST.

Sydney	IST from ZST	- 4 : 30 : 00
	LMT from ZST	+ 0 : 04 : 48
	IST from LMT	- 4 : 34 : 48

Added because Sydney lies east of ZST

Total time difference		10 : 26 : 00
	+	4 : 34 : 48
	=	15 : 00 : 48
The time difference above was also		15 : 00 : 48

Example 9: Find the LMT of birth of a native born in Rio de janeiro (Brazil) at 23 : 45 PM (Standard time) on 20-1-1995.

Time zone of Brazil	= (-) 3 : 00 Hrs.
or 3 × 60	= 180 minutes.
Standard meridian of Brazil	= 180÷4
	= 45° 00' W
Longitude of Rio de Janeiro	= 43° 12' W
Difference between the two	= 1° 48'

(Rio de Janeiro lies east of the standard meridian)

Multiplying by 4

	1°	48'
×	4	4

4 min.192 sec. or 7^m 12^s

Since the place for which LMT is required lies in the east, add or (+)

Standard time at birth on 20-1-1995	=	23 : 45 : 00
Add LMT correction (+)	=	7 : 12
LMT of birth on 20-1-1995	=	23 : 52 : 12

Example 10 : A child is born at 14:30 hrs LMT at New York on 20-2-1995. Find

1. ZST of birth
2. GMT of birth
3. IST of birth

1. ZST of birth :

Time zone of New York	= (-) 5 : 00 hrs
or 5×60	= 300 minutes.
Divide by 4	= 300÷4 = 75°
Longitude of ZST of New York	= 75° 00'
Longitude of New York	= 74°
Difference of longitude	= 1° 00'

towards east and LMT correction will be (+)

Multiply the difference by 4	= 4 minutes.

Since we want ZST from LMT, reverse the sign

LMT of birth	= 14 : 30 hrs.
LMT correction (-)	0 : 04
ZST of birth on 20-2-1995	= 14 : 26 hrs.

2. GMT of birth :

ZST of birth on 20-2-1995	= 14 : 26 hrs.
New York zone (+)	5 : 00
GMT of birth on 20-2-1995	= 19 : 26 hrs

Since GMT is towards east, add or (+). In other words, as the time zone of New York is (-) 5 hrs, GMT will be ahead by 5 hrs or (+) 5 : 00 hrs.

3. IST of birth :

GMT of birth on 20-2-1995	=	19 : 26 hrs.
For IST add (+)	=	5 : 30
IST of birth	=	24 : 56 hrs.

As it is more than 24 hours, the date has changed. So IST of birth 00:56 hrs. on 21-2-1995

Sunrise and Sunset

In Hindu astrology the day starts at sunrise and ends at the next sunrise. From the appearance of Sun's upper disc in the eastern horizon till its full appearance, it takes about 5 to 6 minutes. So which time to take as the time of sunrise becomes debatable.

It is however acknowledged that the time when centre of the solar disc rises in the eastern horizon, is the time of sunrise for that particular place. It is a different matter altogether that when the Sun appears, it is below the horizon by a few minutes of the arc, but due to refraction, it is seen earlier. Similarly the moment when centre of the disc sets in the western horizon can be taken as the time of sunset.

Apparent Noon

Apparent noon is the time when the Sun (or the centre of its disc) crosses the meridian of a place. Apparent noon is mentioned in the ephemeris, in LMT for alternate dates and is same for almost all places. Similarly LMT of meridian passages of all planets are given in the ephemeris. It is the passage of a planet over the observers meridian of a place. The relation of this passage with apparent noon is the same as longitude of Sun and the planet.

Ahas Ratri

Ahas is the duration from sunrise to sunset and the Ratri is the duration from sunset to the next sunrise. When the Sun is at the equator Ahas and Ratri are of 30 ghatis or 12 hours

each at all places on the Earth. At other times, however the total of Ahas and Ratri is always equal to 60 ghatis or 24 hours. The variation between the two is due to declination of the Sun and latitude of the place.

It has been explained earlier that at the equinox, when Sun is crossing the equator, duration of day and night is equal at all places on the Earth. From 21st March (vernal equinox) to 23rd September (autumnal equinox) the Sun has north declination and from 23rd September to 21st March it has south declination. During the Sun's north declination the duration of days is longer and nights shorter in the northern hemisphere and vice versa.

The Hindu day starts from one sunrise and ends at the next sunrise. This period of one day is called *Ahoratri.* This term is derived from the combination of Ahas + Ratri. Another very important term is derived from this word. After expunging the letters outside the brackets A(hora)tri, we get the term hora which signifies an hour. This term is used for various connotations. The science of predictive astrology is referred to as Hora. Also one hour is known as hora or *kaal hora.* This term is derived from Ahoratri and thereafter with the spread of Hindu astrology to the mediterranean and the west, it found its usage in Greek, Latin and French literature.

Calculation of Sunrise and Sunset time

Calculation of sunrise and sunset time is very important for various astrological purposes. In the traditional method of casting of horoscope as well as in Ishtkaal or the duration of time from sunrise to the time of birth, these calculations are required. Although various ephemerides and panchangas give the sunrise and sunset times of big cities, yet the effort here is to explain and understand the basis of these calculations. The following steps may be followed for calculation of sunrise time.

1. Note the latitude of the place.
2. The Indian Ephemeris gives the sunrise and sunset times in LMT for different latitudes. Note the two consecutive dates and latitudes between which the sunrise time is required.

3. Note the two sunrise times and latitudes as above, and find the sunrise for desired latitude and date by interpolation as shown in the example.

Example 11 : Find the sunrise time for Delhi in LMT and IST on 18th November.

Latitude of Delhi 28°39' N
Two consecutive dates 16 Nov and 24 Nov
Two consecutive latitudes 20° and 30°

	Sunrise time in LMT	
	20°	30°
November 16	6 : 09	6 : 26
November 24	6 : 14	6 : 32
Difference	0 : 05	0 : 06
November 18 (By interpolation)	6 : 10 : 15	

Variation for 10° = 17 minutes.
Variation for 8°39' (or 8.65°) = 17÷10 × 8.65
= 14 min 42 sec.

LMT of upper limb visibility at
20° latitude on 18 November = 6 : 10 : 15
Add variation for 8°39' latitude (+) 0 : 14 : 42
LMT of upper limb visibility
at Delhi latitude 28°39' N = 6 : 24 : 57
Refraction & Limb correction (+) 0 : 03 : 30
Sunrise at Delhi on 18 Nov (LMT) = 6 : 28 : 27
Add LMT to IST correction (+) 0 : 21 : 08
Sunrise at Delhi in IST = 6 : 49 : 35
or 6 : 50 AM

Check : LMT of sunrise at Delhi
Nov 17 6 : 28
Nov 21 6 : 31
Nov 18 (By interpolation) 6 : 28 : 45
Add LMT to IST correction (+) 0 : 21 : 08
Sunrise at Delhi in IST 6 : 49 : 53
or 6 : 50 AM

CHAPTER VIII

CASTING OF HOROSCOPE BY MODERN METHOD

"Do that today which you would keep for tomorrow. Do that in the forenoon which you would keep for the afternoon. Death does not wait for anyone to see whether he has or has not performed his task."

- Mahabharata, XII. 322. 73.

Calculation of Sidereal Time of Birth and Ascendant

Ascendant or lagna is that sign, rashi or the point of ecliptic which is rising in the eastern horizon corresponding to the first house of the horoscope. It therefore has the greatest importance without which we cannot proceed with the casting of horoscope.

It has already been explained that due to the rotation of the Earth on its axis once during the 24 hours, the entire zodiac along with its signs, planets and nakshatras get a chance to rise at some point of time during the day in the eastern horizon. It is not enough to know the sign rising in the eastern horizon but also the exact degree of the zodiac. Due to this rotation of the Earth, the sidereal time is also created and hence the rising sign is dependent on the sidereal time at any given point of time.

Sidereal time is defined as the west hour angle of the first point of Aries (vernal equinox) from the upper meridian of the place. Or sidereal time is the local time reckoned according to the apparent rotation of the celestial sphere.

In "The Table of Ascendants", the ascendants for different latitudes are given for sidereal time of the epoch. Sidereal time is always expressed in hours starting from 0 hrs. and ending with 24 hrs. and never in AM or PM. Hence the first step is to calculate the sidereal time and then go on to calculate the ascendant.

Steps for calculation

1. Note the sidereal time of birth from Table I, Page 2 and 3 of The Table of Ascendants. This table gives the sidereal time at 12 noon LMT for different days of the year for 82° 30' East longitude, and for the year 1900 AD.
2. Apply the correction for different years from Table II, Page 3 and 4. This table gives the correction for the year of birth from the year 1800 to 2000. The marks * are for January and February and † for the remaining months of the year. The signs of correction (+) or (-) are to be carefully applied. Table II (a) gives the correction for other centuries which may be used in case of need.
3. Apply the correction for different localities Table III, Page 5. For corrections of important cities in India and abroad, refer to pages 100 to 112. This correction is mentioned under the last column as *Corr. to IST.* The signs of correction (+) or (-) to be carefully applied.
4. The result so obtained gives us the sidereal time for the date year and place at 12 hours noon LMT (Refer to step 1 above). Call this result as "A".
5. Write down the IST/ZST time of birth in hours, minutes and seconds and not in AM/PM. Apply LMT correction from the table of principal cities referred to above.
6. The local noon LMT time is the sidereal time at noon. Find the difference of LMT from 12:00 hours. If the time in step 5 is more than 12:00 then deduct 12:00 hours therefrom, and if the time is less than 12:00 then deduct the time from 12:00 hours to find the time interval (TI) from noon.
7. Apply the correction for time interval from Table IV page 5, and ADD it to time interval (TI) and call it "B".
8. If the time of birth is afternoon or PM, then add "A" to "B". If the time of birth is forenoon or AM, then subtract "B" from "A" i.e. (A - B). The resultant will be the sidereal time of birth.

9. From The Table of Ascendants, refer to the relevant latitude table which is nearest to the place of birth. For precise calculations find the correct ascendant by interpolation of the two tables of latitudes within which the latitude of the place falls. However it may suffice to take the table of nearest latitude for easy calculations. Find the ascendant from the sidereal time of birth (epoch) calculated in step 8 above by using the relevant table of ascendants. On the bottom of the table, the proportional parts are given for easy reference.
10. To the ascendant calculated above, apply the ayanamsha correction from pages 6 & 7. In these tables, the correction upto the year 1937 is positive or (+), for the year 1938 the correction is zero, and after the year 1938, the correction is negative (-). The result gives the exact degrees of lagna or the ascendant.

There are certain other points of clarifications before we attempt some examples of casting of horoscope.

War Time Correction

From 1st September 1942 to 14th October 1945, Indian Standard Time (IST) was advanced all over India including modern Bangladesh and Pakistan by one hour for war purposes of daylight and made equivalent to Bengal time which was thus 6^h30^m ahead of GMT. Any birth time of this period is to be reduced by one hour to obtain the correct birth time in IST.

For corrections to be made for years of war and thereafter, in different places, refer to page (v) immediately after the contents, titled "Changes in the timings in India" in the Tables of Ascendants. Several European countries advanced their clocks by one hour during the second world war. That system of time is still being continued in these countries.

Summer Time Correction

Several countries observe what is known as summer time or the day light saving time during summer months. In England prior to 1973 the British summer time was observed at different dates which are given in the Tables of Ascendants. During this period the clock time was set one hour more than the GMT. In the

years 1941 to 1947 however the clocks were set 2:00 hrs more than GMT, called the double summer time. The present daylight saving time in United Kingdom is from last Sunday in March to last Sunday in October.

In North America (USA, Canada, Mexico) the summer time was being observed from 2:00 AM of last Sunday in April to 2:00 AM of last Sunday in October. The clocks are advanced by one hour during this period. Periodically changes have been made in this schedule and from 2007 the day light saving time is from 2:00 AM on second Sunday of March to 2:00 AM on first Sunday of November.

Calculation of Ascendant for Southern Latitudes

The Tables of Ascendants gives us the ascendants for northern latitudes. The following steps are therefore required for arriving at the ascendants for southern latitudes.

1. To the sidereal time of birth calculated, add 12 hours. If the resultant figure exceeds 24 hours then subtract 24 hours from the same. In other words apply the correction of +/- 12 hours to the sidereal time. This means that if the sidereal time is less than 12 hours then add 12 to it and if the sidereal time is more than 12 hours then subtract 12 from it.
2. Find the ascendant from the Tables of Ascendants as if they are northern latitudes.
3. Apply Ayanamsha correction for the year of birth from pages 6 and 7 of the Tables of Ascendants.
4. Apply correction of +/- 6 signs to the resultant signs in step 3 above, i.e. if the signs are less than 6 then add 6 signs to it and if the signs are more than 6 then subtract 6 signs from it. The resultant will give the ascendant for the southern latitude.

Understanding the Tables

The tables referred to above need some explanation for a better understanding of the concepts involved. For this purpose refer to ***The Tables of Ascendants.***

Table I : This table is constructed for 12.00 hrs noon LMT for 82°30' E longitude corresponding to the standard meridian

for India. It gives sidereal time for the year 1900. As explained earlier the sidereal time is always referred to as 00:00 hrs to 24:00 hrs and not as AM or PM, because sidereal time is zero when the vernal equinox crosses the observers meridian. It is the west hour angle of the vernal equinox and is counted from this point of 00:00 hrs and continues upto 24:00 hrs.

In the year 1900, the vernal equinox crossed the observers meridian at 82°30' E on 23rd March. With the yearly precession of equinoxes at the mean rate of about 50.29" of the arc per year, the vernal equinox now occurs on 21st March and continues to shift westwards. For this reason the ayanamsha correction is further applied and is explained under the relevant table.

Table II : This table gives the correction for different years and is to be applied on the figure obtained from Table I. The sidereal time obtained for the year 1900 is to be corrected for the year in question. It may be observed that the correction for the year 1900 is zero. The month of February has 29 days and the variation between any two days e.g. 28th and 29th February is 3^m56^s. This is nothing but the difference between the sidereal day and the solar day.

On taking the figure from Table I, this variation of one day i.e. the 29th February gets accumulated untill the leap year and must be corrected by using Table II. From the year 1900 onwards the variation of one fourth of a day is added and gets adjusted with the leap year. A closer look at Table II will bring out the point being made. It is sufficient to understand the logic of the table and not be bothered about the complex nature of its construction.

Table III : This table is applied to the result obtained from Table II. The logic here is that the sidereal day is smaller than the solar day by $0^h3^m55.91^s$. This divided by 360° gives us 0.66" per 1° of longitude. The sidereal time varies at this rate per 1° of longitude from the standard merdian of India (82°30'E). As the sidereal time is the west hour angle, this correction is to be applied as (+) for longitudes west of this meridian, and (-) for longitudes east of this meridian. This table is only illustrative and for getting the correction

for various cities, the relevant pages of *The Table of Ascendants* may be referred to.

Table IV: The sidereal time obtained so far is for 12:00 hrs noon and the correction for the difference from noon must be applied to get the correct figure. The sidereal time variation in a period of 24 hours is about 4 minutes. If we divide 4 minutes by 24 hours, we get the sidereal time variation of 10 seconds per hour. This correction is added for the difference from noon.

Table for Ayanamsha correction : The tables in the book are constructed on nirayana basis. It adopts the chitrapaksha ayanamsha as zero on the vernal equinox day of the year 285 AD. In the year 1938, the value of ayanamsha was 23° and the tables have been made with this as a constant value. This means that the tables incorporate the value of ayanamsha of 23 degrees as a constant and gives the nirayana ascendants. For any year before or after 1938, the correction of ayanamsha must be applied at the yearly rate of about 50.29" of the arc. This is nothing but the yearly rate of precession of equinox.

Before 1938 the correction is positive and after 1938 it is negative. It may be observed that the correction value increases by 1' every year and after every 5 years or so, the correction repeats itself. The reason is simple to understand. If every year 1' is corrected instead of 50", then in 5 years 5' would have been corrected instead of the required 50 × 5 or 4'10" and hence in the 5th year no correction need be increased to adjust the same. The values given in the table are for the middle of the year.

Calculation of Sayana Longitudes

If the sayana longitude of ascendant is required, the constant ayanamsha of 23°00' (constant value taken for the year 1938) may be added back to the nirayana longitude of the ascendant without applying the ayanamsha correction from the table. This will give the sayana longitude of the ascendant.

Calculation of Longitudes of Planets

Indian Ephemeris by N.C. Lahiri is available from the year 1900 to 1995 in the following booklets.

1. Condensed Ephemeris from 1900 - 1941 where weekly planetary positions at 5:30 PM IST (Indian Standard Time) corresponding to 12:00 noon Universal time is given for all the planets. However daily position of Moon, biweekly position of Mercury and monthly position of Rahu / Ketu is given.
2. Condensed Ephemeris for the years 1941 - 51, 1951 - 61, 1961 - 71, 1971 - 81 etc where daily position of Moon and Mercury and alternate day's position for other planets except Rahu/Ketu whose monthly position is given for 5:30 AM IST corresponding to 00:00 Hrs Universal time.
3. Yearly Ephemeris e.g. 1991, 1992, 1993, 1994, 1995 where daily position for planets at 5:30 AM IST is given.

The example of Indian Ephemeris is only indicative. In fact any other ephemeris can be used. However it is recommended that an ephemeris which follows the chitrapaksha ayanamsha is used.

The method of arriving at the planetary position from daily, weekly, or monthly positions will be explained as we proceed to solve the examples.

Examples of Casting of Horoscopes

The following four examples have been worked out in this chapter. In each of these solved examples the steps involved are explained for easy understanding of the students.

1. Example of birth in India in the year 1994.
2. Example of birth in India between 1900 - 1941.
3. Example of birth in USA between 1961 - 1971.
4. Example of birth in Australia (Southern Latitude) in the year 1995.

These examples will show the working of various steps enumerated in the earlier pages with regard to use of condensed ephemeris wherein planetary position of different intervals have been given. One example of southern latitude will explain the steps involved in this regard.

An example explaining method of using yearly ephemeris where daily position of planets is given

Example No 1 : Cast a nirayana horoscope of a native born in Delhi on 20th July 1994 at 14:50 hours IST.

Solution :

			h m s
Sidereal time at 12:00 Noon LMT on 20th July 1900 (Table I)			7 : 50 : 20
Correction for the year 1994 (Table II)		(+)	0 : 55
Correction for place, Delhi (Table III)		(+)	0 : 03
Sidereal time at Delhi on 20th July 1994 12:00 noon LMT	(A)		7 : 51 : 18
IST time of birth			14 : 50 : 00
LMT correction		(-)	21 : 08
LMT of birth			14 : 28 : 52
Noon +/- 12:00 hrs			12 : 00 : 00
Difference from Noon			2 : 28 : 52
Correction for time interval		(+)	0 : 20
(Table IV)		(+)	0 : 5
	(B)		2 : 29 : 17
PM birth	(A+B)		7 : 51 : 18
Sidereal time of birth			10 : 20 : 35
Ascendant for Delhi (Page 48 of Table of Ascendants)			
10^h20^m			7^s–3°–16'
35^s			7'
[The difference of readings between 10^h20^m and 10^h24^m is 51' (4°7'–3°16') hence for the variation of 35^s the ascendant would increase by 7' – see bottom of page 48 for proportional parts]			7^s–3°–23'
Ayanamsha correction for 1994		(-)	0°–47'
Ascendant or Lagna			7^s–2°–36'

which means 7 signs past, 2°36' or Scorpio 2°36'

Calculation of planetary position

Moon : In the ephemeris for 1994 Moons position has been given for 5:30 AM as well as for 5:30 PM. (In the ephemeris

of 1995 however, for Moon also daily position as on 5:30 AM only is given). Moon being fast moving, we must arrive at the longitude from nearest to 5:30 AM or PM as the case may be. We have to take two reading of the longitudes in such a way that the time of birth falls in between the two.

		s ° ' "
Moon's longitude on 20-7-94 at 5:30 PM		8-02-56-42
Moon's at 5:30 AM		7-25-48-05
Moons motion in 12 hours		7-08-37
Time difference from 5:30 AM to 14:50 hrs. (time of birth) 14:50–5:30	=	9:20 hrs.

By calculator we can find the motion in 9:20 hrs if the 12 hours motion is 7°-08'-37" as,

$$\frac{7°08'37" \times 9^h20^m}{12^h} = 5°\text{-}33'\text{-}22"$$

By Proportional Logarithm method		
12 hours motion of Moon	=	7°-08'-37"
24 hours motion of Moon (×2)	=	14°-17'-14"
Log of motion of 14°17' (page 99)	=	0.2254
Log of motion of 14°18'	=	0.2249
for 14°17'14" (By interpolation)	=	0.2253
Log of 9^h20^m	=	0.4102
Add	=	0.6355
Antilog of 0.6359	=	5°33'
Antilog of 0.6346	=	5°34'
variation of 13 = 1'		
variation of 4 = 9"		
Antilog of 0.6355	=	5°-33'-18"
Add this to Moon's longitude at 5:30 AM to arrive at the longitude at 14:50 hours	=	7^s-25°-48'-05"
Increase in longitude as per calculator	=	5°-33'-22"
Longitude of Moon at the time of birth	=	8^s-01°-21'-27"

Normally it is sufficient to take the degrees upto minutes only and seconds may be ignored. Hence nearest antilog figures may be taken. The position of Moon is Sagittarius 1°21'.

If the time of birth is a proportional round figure say 11:30 a.m. (i.e. 1/4th of 24 hours, then the daily motion of planet

is just to be divided by 4. If the time interval is not a round proportion of 24 hours, like 14:50 hrs as in the example, we can calculate it either by log or calculator method. Now we can calculate the planetary position of the remaining planets at 14:50 hrs. on 20-7-1994.

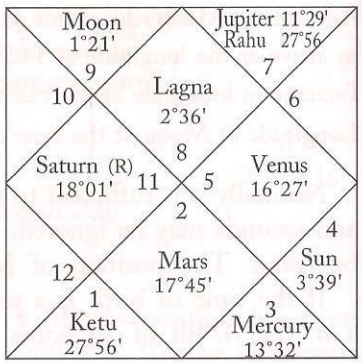
Longitudes of planets at 14:50 hrs. IST on 20-7-94

Posn.5:30 am	Sun s o ' "	Merc s o '	Ven s o '	Mar s o '	Jup s o '	Sat s o '	Rah s o '
21-7-94	3-4-14-22	2-14-15	4-17-08	1-18-10	6-11-31	10-18-00	6-27-54
20-7-94	3-3-17-07	2-13-05	4-16-01	1-17-29	6-11-27	10-18-02	6-27-58
Motion 24 hr	57-15	1-10	1-07	0-41	0-04	(-) 0-02	(-) 0-04
Log of motion	1.4025	1.3133	1.3323	1.5456	2.5563	2.8573	2.5563
Log of time interval 9:20	0.4102	0.4102	0.4102	0.4102	0.4102	0.4102	0.4102
Total	1.8127	1.7235	1.7425	1.9558	2.9665	3.2675	2.9665
Antilog (nearest)	0-22	0-27	0-26	0-16	0-02	(-) 0-01	(-) 0-02
Add 20-7-94	3-3-17-07	2-13-05	4-16-01	1-17-29	6-11-27	10-18-02	6-27-58
Pl. posn at birth time	3-3-39-07	2-13-32	4-16-27	1-17-45	6-11-29	10-18-01	6-27-56
						(R)	(R)

We have already calculated the Ascendant of birth as 7s2°36', Longitude of Moon as 8s1°21' and the longitudes of other planets as above. In the above calculation, however, note that Saturn was in retrograde motion and hence the proportionate motion of planet from 5:30 AM to time of birth shown by antilog has been subtracted. To signify this retrograde motion (R) is written in the horoscope next to the name of the planet. Since Rahu and Ketu are always in retrograde motion, (R) is not written.

Horoscope

	Ketu 27°56'	Mars 17°45'	Mercury 13°32'
Saturn (R) 18°01'	**Horoscope No.1** July 20, 1994 14:50 hrs (IST) Delhi		Sun 3°39'
			Venus 16°27'
Moon 1°21'	Lagna 2°36'	Jupiter 11°29' Rahu 27°56	



An example explaining method of using condensed ephemeris for the year 1900-1941 where weekly position of planets is given

Example No 2 : Cast a nirayana horoscope of a native born in Bombay at 7:35 AM IST on 13th December 1937.

Solution : This example is taken to show the steps involved in using a 1900-1941 condensed ephemeris of planets position and the Table of Ascendants.

		h m s
Sidereal time at 12 Noon LMT on 13-12-1900 (Table 1)		17 : 25 : 57
Correction for 1937 (Table II)	(+)	0 : 09
Correction for the place-Bombay (Table III)	(+)	0 : 06
	(A)	17 : 26 : 12
IST of birth (given)		7 : 35 : 00
LMT correction (from Table of Ascendants)	(-)	38 : 40
		6 : 56 : 20
Noon +/- 12:00 hrs		12 : 00 : 00
Difference from Noon		5 : 03 : 40
Correction for time interval (Table IV)	(+)	0 : 49
	(+)	0 : 01
	(B)	5 : 04 : 30
AM birth	(A-B)	17 : 26 : 12
	(-)	5 : 04 : 30
Sidereal time of birth		12 : 21 : 42

Ascendant for Latitude 18°58' (Taken as 19°N)

12^h20^m	8^s–3°–43'
1^m42^s	23'

Difference in 4 min = 55"

Difference in $1^m42^s = \frac{55 \times 102}{240} = 23'$

8^s–4°–6'

Ayanamsha correction (+) 1'

Ascendant 8^s–4°–7'

or Sagittarius 4°–7'

Planetary Position

Position of Moon on 13-12-37 (5:30 PM)	11^s–28°–50'
Position of Moon on 12-12-37	11^s–14°–57'
Moon's motion in 24 hours	13°–53'
Log of 13°53'	0.2377

Log of 14^h5^m (time interval) from 5:30 PM on 12-12-37 to 7:35 AM on 13-12-37	0.2315
Adding the two	0.4692
Antilog of 0.4692	8°–09'
Add to position on 12-12-93	11ˢ–14°–57'
Longitude of Moon	11ˢ–23°–06'

In the condensed ephemeris where 7 days motion is given, the Mercury's position is given twice a week i.e. on every Sunday and every Wednesday. Since the planetary motion is never uniform, especially of fast moving planets, we have to use this information for arriving at accurate position of Mercury. Let us see how.

Mercury's position at 5:30 PM on 15-12-37 (Wed)	8ˢ-20°-23'
Mercury's position at 5:30 PM on 12-12-37 (Sun)	8ˢ-17°-39'
3 days motion	2°-44'

therefore 7 days motion $\frac{2°44' \times 7}{3}$,

or $2 \times 60 = 120+44 = \frac{164 \times 7}{3} =$ 6°–23'

Add to the position on 12-12-37	8ˢ–17°–39'
Mercury's position on 19-12-37 at 5:30 PM	8ˢ–24°–02'

Compare this figure with the position of Mercury on 19th Dec. 1937 of 8-22-29. Therefore we take advantage of the information provided in the ephemeris. If Wednesdays position had not been given, we would have calculated Mercury's longitude also from weekly position given in the ephemeris.

Method to use Table II of proportional logarithm (From weekly tables)

As in this case the time interval varies upto 7 days, and table I gives the log figures upto 24 hours or degrees, we use a weekly table II given in the Table of Ascendants, for easy calculations. See the day for which the planetary position is required. In this case it is Monday. (Seen from the relevant page while calculating Moon's longitude).

On Monday the time of birth is 7:35 AM	
Log figures given for 7:30 AM (Monday)	1.0792
Log figures given for 8:00 AM (Monday)	1.0639
Motion in 30 minutes	0.0153

Motion in 5 minutes $\frac{153 \times 5}{30} = 25$ or 0.0025

Deduct this from the log figures at 7:30 AM (As the figures are reducing with increase in time interval.	1.0792
	(-) 0.0025
	1.0767

This log of 7:35 AM on 13-12-37 (Monday) can be used by us as the log of motion for the time interval. Now we proceed to calculate the longitudes of planets.

Longitudes of planets at 7:35 hrs. IST on 13-12-1937

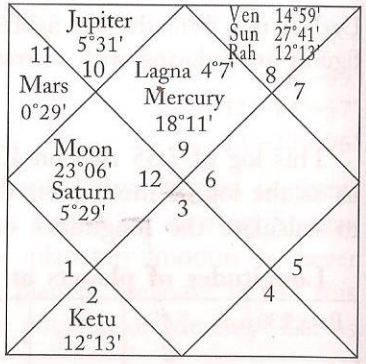
Posn.5:30 p.m.	Sat s o '	Jup s o '	Mar s o '	Sun s o '	Ven s o '	Mer* s o '
19-12-37	11-5-39	9-6-53	10-5-20	8-4-12	7-23-03	8-24-02
12-12-37	11-5-28	9-5-23	10-0-02	7-27-5	7-14-15	8-17-39
Motion in 7 days	0-11	1-30	5-18	7-7	8-48	6-23
Log of motion for 7 days	2.1170	1.2041	0.6559	0.5279	0.4357	0.5752
Log of 7:35 am on 13-12-37 (Mon)	1.0767	1.0767	1.0767	1.0767	1.0767	1.0767
Total	3.1937	2.2808	1.7326	1.6046	1.5124	1.6519
Antilog (Nearest)	0-01	0-08	0-27	0-36	0-44	0-32
Add posn on 12-12-37	11-5-28	9-5-23	10-0-02	7-27-5	7-14-15	8-17-39
Position at birth	11-5-29	9-5-31	10-0-29	7-27-41	7-14-59	8-18-11

*Not given in ephemeris but calculated separately on previous page explaining reasons.

Longitude of Rahu :			
Position at 5:30 PM on	1-12-37	(page 77)	7-12-50
Position at 5:30 PM	1-1-38	(page 79)	7-11-11
Motion in 31 days	1°39'		
Motion in 11 days	0°35'	} Deduct these	
Motion in 12 days	0°38'	} from above	
Rahu's position on	12-12-37	at 5:30 PM	7-12-15
Rahu's position on	13-12-37	at 5:30 PM	7-12-12
Motion in one day	0°03'		
Log of motion	2.6812		
Log of time 14:05 hrs	0.2315		
Add	2.9127		
Antilog			0°02'
Position of Rahu on 12-12-37			7-12-15
Deduct			(-) 0-02
Position of Rahu at birth			7ˢ12°13'
Position of Ketu			1ˢ12°13'

Horoscope

Moon 23°06' Saturn 5°29'		Ketu 12°13'	
Mars 0°29'	Example No.2 7:35 am(IST) 13:12:1937 Bombay		
Jupiter 5°31'			
Lagna 4°07' Mercury 18°11'	Ven 14°59' Sun 27°41' Rah 12°13'		



An example explaining method of using Condensed Ephemerides for the years 1941 to 1981

In these condensed ephemerides daily position of Moon and Mercury, alternate days position of other planets and monthly position of Rahu is given.

Example No 3 : Cast a nirayana horoscope of a native born in Chicago (USA) at 6:30 hrs. LMT on 17th April 1961.

Solution : This example is taken to show the use of condensed ephemeris and calculation of horoscope for western longitudes (of places other than India). Also the time of birth is given in LMT.

			h m s
Sidereal time at 12h. noon on 17th April 1900 (Table I)			1 : 39 : 43
Correction for the year 1961 (Table II)		(+)	0 : 53
Correction for the place Chicago		(+)	1 : 52
	(A)		1 : 42 : 28
LMT of birth (given)			6 : 30 : 00
+/- 12:00 hrs			12 : 00 : 00
Difference from noon			5 : 30 : 00
Correction for time interval (Table IV)		(+)	0 : 54
	(B)		5 : 30 : 54
AM birth	(A-B)		1 : 42 : 28
		(-)	5 : 30 : 54
Sidereal time of birth			20 : 11 : 34

Ascendant for Latitude 41°53' N		
$20^h8^m00^s$		0^s-28°-37'
3^m34^s (method explained earlier)		1°-11'
		0^s-29°-48'
Ayanamsha correction	(-)	0°-19'
		0^s-29°-29'

Ascendant Aries 29°29'

Calculation of planetary longitudes

Upto the calculation of Ascendant there is no difference in the steps involved. But for calculation of planetary longitudes for western terrestrial longitudes we have to convert the time of birth into IST because we have with us the ephemeris showing the planetary position as on 5:30 AM IST.

LMT of birth		6 : 30 : 00
ZST of birth	(-)	9 : 28
sign changed because we are calculating ZST from LMT and not LMT from ZST		
ZST of birth		6 : 20 : 32
IST from ZST		(+) 11 : 30 : 00
IST of birth		17 : 50 : 32

Now for 17:50:32 hrs IST we can calculate the planetary longitudes. In these ephemerids the position is given for alternate days except for Moon and Mercury for which daily position is given for greater accuracy, they being faster moving planets. The IST of 17:50:32 has been rounded off to the nearest minute and the time is taken is 17^h51^m.

In proportional logarithm tables of alternate days, the given date will be 17-4-1961 itself and for 17:51 or 5:51 PM the figures will be as follows :

5:30 PM	0.6021
6:00 PM	0.5843
Difference	0.0178

For finding the log figure for 5:51, $0.0178 \div 30 \times 21 = 0.0125$

5:30 PM	0.6021
Diff. for 21 min.	(-) 0.0125
5:51 PM	0.5896

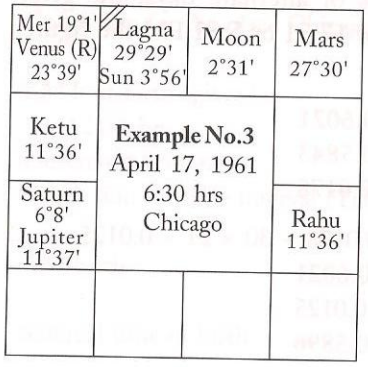
Longitudes of Planets at 17:51 hrs IST corresponding to 6:30 hrs LMT at Chicago, on 17-4-1961

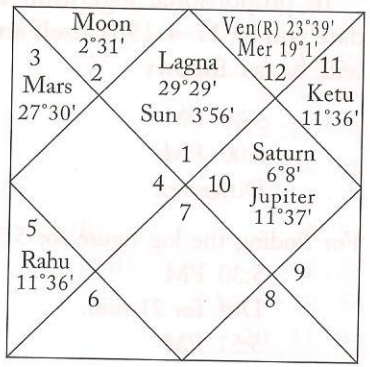
Posn 5:30 am	Mon s o '	Merc s o '	Sat s o '	Jup s o '	Mar s o '	Sun s o '	Ven s o '
19-4-61	–	–	9-6-12	9-11-47	2-28-12	0-5-23	11-22-52
18-4-61	1-8-54	11-19-54	–	–	–	–	–
17-4-61	0-25-45	11-18-05	9-6-07	9-11-33	2-27-15	0-3-26	11-23-55
Motion in 2 days	–	–	0-05	0-14	0-57	1-57	(-) 1-03
Motion in 1 day	13-09	1-49	–	–	–	–	–
Log of motion	0.2613	1.1209	2.4594	2.0122	1.4025	1.0902	1.3590
Log of T.I. 12:21	0.2885	0.2885	–	–	–	–	–
Log of T.I. 5:51pm	–	–	0.5896	0.5896	0.5896	0.5896	0.5896
Add	0.5498	1.4094	3.0490	2.6018	1.9921	1.6798	1.9486
Antilog	6-46	0-56	0-01	0-04	0-15	0-30	(-) 0-16
Add posn 5:30 a.m. on 17-4-1961	0-25-45	11-18-05	9-6-07	9-11-33	2-27-15	0-3-26	11-23-55
Pl. position at birth	1-2-31	11-19-01	9-6-08	9-11-37	2-27-30	0-3-56	11-23-39 (R)

Planetary position of Rahu :

	s o '
On 1st May 1961	4-10-43
On 1st April 1961	4-12-40
Rahu's motion in 30 days	1-57
Rahu's motion in one day	0°3'54"
Rahu's motion in 16 days	1°2'24"
Position of 1st April	4-12-40
Deduct for 16 days (R)	(-) 1-02
Deduct for 12:21 hrs (Half of 1 days motion appr.)	(-) 2'
Longitude of Rahu	4s11°36'
Longitude of Ketu	10s11°36'

Horoscope





An example explaining method of calculating the horoscope for southern latitudes

Example No 4 : Cast a nirayana horoscope of a native born at Sydney on 13th July 1995 at 12:50 PM (ZST).

Solution :

Place of birth	:	Sydney (Australia)
Time Zone	:	+ 10 hrs.
Latitude	:	33°52' S
Longitude	:	151°12' E
LMT from ZST	:	+ 4^m48^s
IST from ZST	:	- 4^h30^m
Corr. to Indian Sid.time	:	- 0^m45^s

		h m s
S.T. at 12 noon on 13-7-1900 at 82° 30' E		7:22:44
Correction for the year 1995	(-)	0:03
		7:22:41
Correction for the place	(-)	0:45
	(A)	7:21:56
ZST time of birth		12:50:00
LMT correction	(+)	4:48
LMT of birth		12:54:48
+/- 12 hours		12:00:00
Difference from noon		54:48
Correction for time interval	(+)	0:09
	(B)	0:54:57
PM birth (A+B)	(A)	7:21:56
Sidereal time of epoch		8:16:53

The place of birth, Sydney is situated in southern hemisphere, hence +/- 12 hours correction is applied to the S.T. of epoch. (+)12:00:00

20:16:53

Latitude of Sydney is 33°52' S, for calculation of ascendant, we take the nearest table of 34° latitude

Ascendant for ST of 20 16 00	0^s–25°–39'
Proportionate variation for 53 seconds	0°–17'
	0^s–25°–56'
Ayanamsha correction for 1995	(-) 0°–48'
	0^s–25°–08'

Now applying +/- 6 signs correction again to the result, as we had applied +/- 12 hrs correction earlier. (+) 6°

Ascendant 6°–25°–08'

Or Libra 25°08'

Calculation of Planetary longitudes

Since we have with us the Indian Ephemeris showing planetary longitudes as per Indian Standard Time, we have to necessarily convert the ZST or LMT to IST, as follows :

ZST of birth		12:50	PM
IST from ZST	(-)	4:30	
IST of birth		8:20	AM

Planetary position at 8:20 AM IST on 13th July 1995 may be calculated as per method given in the previous examples. The full calculation is not being repeated here.

Calculation of ascendant where LMT correction alters the date or time from midnight or noon

There is always some confusion when the time of birth is such which changes the date after LMT correction is made. In that case whether you should consider it as AM birth or PM birth, and whether you should apply the formula (A+B) or (A-B) in such cases.

Please remember that you take the sidereal time of birth for a particular date. If by applying LMT correction the time shifts to previous date then continue to take it as AM birth. The logic is that the sidereal time continues to be before the noon for which you have taken the sidereal time in the first step.

Similarly if the time shifts to next date, then continue to take it as PM birth. Again the logic here is that the sidereal time continues to be after the noon for which you have taken the sidereal time in the first step. Accordingly you may apply the formula of (A+B) or (A-B) respectively in such cases.

In cases where the time of birth is around noon and LMT correction shifts the sidereal time to before noon or after noon you must apply the formula of (A+B) or (A-B) on the basis of corrected time of birth after applying the LMT correction.

For example if birth time is 12:05 PM and after LMT correction it becomes 11:48 AM, then apply the formula (A-B) as if it is AM birth. Similarly if birth time is 11:48 AM and after applying LMT correction it shifts to 12:05 PM then apply the formula (A+B) as if it is PM birth.

CHAPTER IX

THE VIMSHOTTARI DASHA

"Do not be ruled by attachment and aversion, because both of them are the great enemies that obstruct you on the way to good."

-Bhagwad Gita, III. 34.

In the previous chapter we have understood in detail the method to cast a horoscope. This chart of heavens at the time of birth provides clues of events which a native may encounter during his life - present, past as well as future. All this is based on karmas - sanchita, prarabdha and kriyamaan which shape the things to come. When a particular event will fructify remains the most important step in astrological predictions. The nature of planetary combinations reveals the strength and weaknesses of a horoscope yet accurate timing of events remains the most intricate question in this scheme of things.

Our ancient sages had evolved numerous dasha systems to solve this problem. Maharishi Parashar in his *Brihat Parashar Hora Shastra* has narrated many kinds of dashas. However Vimshottari dasha seems to give us most accurate results and is therefore most prevalent among Hindu astrologers. In Sanskrit *Vimshottari* means one hundred and twenty. Hence this dasha scheme follows a cycle of 120 years. Each planet which is called the ruling planet for three nakshatras is allotted a fixed number of years.

The total of these years add upto 120. Vimshottari dasha gives fairly accurate timing of events and has stood the test of time. It is evident from its widespread usage and popularity. No astrologer attempts to work on a horoscope without referring to Vimshottari dasha. However composite technique of correlation with other important dashas like Jaimini, Yogini etc. give excellent results.

In chapter VI the nakshatras and their extent in degrees have been mentioned. There are two and a quarter nakshatras in each sign and a block of 9 nakshatras are allotted to the group of 4 signs. From times immemorial Moon has proved to be the most accurate clock. In fact it is the Moon which sets the clock in motion at the time of birth. The longitudinal degrees occupied by Moon or in other words the nakshatra in which Moon is posited determines the dasha which native is enjoying at the time of his birth. It is also called the dasha balance at birth or ruling period. The elapsed degrees of a nakshatra is called *bhukta* dasha of the lord of nakshatra whereas the remaining degrees within the extent of nakshatra gives us the *bhogya* period which is called dasha balance at birth. The order of dashas and their periods remain fixed as stated below in the table.

Nakshatras			*Lord*	*Years*
Ashwini	Magha	Moola	Ketu	7
Bharani	Purva Phalguni	Purva Ashada	Venus	20
Krittika	Uttara Phalguni	Uttara Ashada	Sun	6
Rohini	Hasta	Shravana	Moon	10
Mrigshira	Chitra	Dhanishta	Mars	7
Ardra	Svati	Shatbhisha	Rahu	18
Punarvasu	Vishakha	Purva Bhadra	Jupiter	16
Pushya	Anuradha	Uttara Bhadra	Saturn	19
Ashlesha	Jyeshtha	Revati	Mercury	17

Janma Rashi, Janma Nakshatra and Nakshatra pada

The Moon has been given immense importance in Hindu astrology. In fact the sign occupied by Moon is considered to be another ascendant from which horoscope is evaluated. This sign occupied by Moon is called *Janma Rashi.* Similarly nakshatra occupied by Moon at the time of birth is called *Janma Nakshatra* of the native.

The extent of each nakshatra of 13°20' is divided into 4 parts or padas of 3°20' and hence 27 nakshatras have a total of 108 padas. This number is therefore considered auspicious in propitiation of all nakshatra padas. The rosary or *mala* used for recitation of mantras too has 108 beads for this reason. Consider Moon at 3°23°42' at birth in the Cancer sign. The janma rashi

is Karka. Further it occupies Ashlesha nakshatra (extent 16°40' to 30°00' in Cancer). Thus janma nakshatra is Ashlesha 3rd pada.

Maha Dasha

The period of Vimshottari dasha of planets which adds upto 120 years is called the maha dasha or main periods e.g. 16 years for Jupiter, 19 years for Saturn etc. Calculation of dasha balance at birth involves the following steps :

1. Each nakshatra has an extent of 13°20' which is equivalent to 800' of arc in the zodiac. Call it Y.
2. Calculate the remaining period of nakshatra in minutes. Call it X.
3. Divide X by Y and multiply it by number of years allotted to the ruling planet in Vimshottari dasha.

Example : Calculate dasha balance at birth if Moon is 4^{s}17°32'

Solution : Moon in nakshatra - Purva Phalguni
Lord of nakshatra - Venus.
Remaining period of Purva Phalguni
4^{s}26°40' - 4^{s}17°32' = 9°8' = 548'
(The extent of P.Phalguni nakshatra is 4-13-20 to 4-26-40)

Dasha balance at birth $\frac{548 \times 20}{800}$ = 13.7 years

Converting into years, months and days we get, Balance of Venus dasha as 13 years, 8 months, 12 days.

The dasha balance can also be calculated using a table as follows :

Longitude of Moon at birth 4^{s}17°32'
or Moon is placed in Leo sign or Simha rashi.
In the table we observe under the sign Leo
Longitude of Moon 17°20', Balance of Venus 14-0-00
From proportional parts table, 12' (-) 3-18
(As with increase of longitude dasha balance decreases, we deduct)
Balance of Venus dasha 13-8-12
or 13 years, 8 months, 12 days.

Balance of Vimshottari Dasha from Sidereal Longitude of Moon

Long of Moon	Moon in Mesha Simha, Dhanu				Moon in Vrish Kanya, Makar				Moon in Mithun Tula, Kumbh				Moon in Karka Vrishchik, Meena			
° '		y	m	d		y	m	d		y	m	d		y	m	d
0 0	Ketu	7	0	0	Sun	4	6	0	Mars	3	6	0	Jupiter	4	0	0
0 20		6	9	27		4	4	6		3	3	27		3	7	6
0 40		6	7	24		4	2	12		3	1	24		3	2	12
1 0		6	5	21		4	0	18		2	11	21		2	9	18
1 20		6	3	18		3	10	24		2	9	18		2	4	24
1 40		6	1	15		3	9	0		2	7	15		2	0	0
2 00		5	11	12		3	7	6		2	5	12		1	7	6
2 20		5	9	9		3	5	12		2	3	9		1	2	12
2 40		5	7	6		3	3	18		2	1	6		0	9	18
3 0		5	5	3		3	1	24		1	11	3		0	4	24
3 20		5	3	0		3	0	0		1	9	0	Saturn	19	0	0
3 40		5	0	27		2	10	6		1	6	27		18	6	9
4 0		4	10	24		2	8	12		1	4	24		18	0	18
4 20		4	8	21		2	6	18		1	2	21		17	6	27
4 40		4	6	18		2	4	24		1	0	18		17	1	6
5 0		4	4	15		2	3	0		0	10	15		16	7	15
5 20		4	2	12		2	1	6		0	8	12		16	1	24
5 40		4	0	9		1	11	12		0	6	9		15	8	3
6 0		3	10	6		1	9	18		0	4	6		15	2	12
6 20		3	8	3		1	7	24		0	2	3		14	8	21
6 40		3	6	0		1	6	0	Rahu	18	0	0		14	3	0
7 0		3	3	27		1	4	6		17	6	18		13	9	9
7 20		3	1	24		1	2	12		17	1	6		13	3	18
7 40		2	11	21		1	0	18		16	7	24		12	9	27
8 0		2	9	18		0	10	24		16	2	12		12	4	6
8 20		2	7	15		0	9	0		15	9	0		11	10	15
8 40		2	5	12		0	7	6		15	3	18		11	4	24
9 0		2	3	9		0	5	12		14	10	6		10	11	3
9 20		2	1	6		0	3	18		14	4	24		10	5	12
9 40		1	11	3		0	1	24		13	11	12		9	11	21
10 0		1	9	0	Moon	10	0	0		13	6	0		9	6	0
10 20		1	6	27		9	9	0		13	0	18		9	0	9
10 40		1	4	24		9	6	0		12	7	6		8	6	18
11 0		1	2	21		9	3	0		12	1	24		8	0	27
11 20		1	0	18		9	0	0		11	8	12		7	7	6
11 40		0	10	15		8	9	0		11	3	0		7	1	15
12 0		0	8	12		8	6	0		10	9	18		6	7	24
12 20		0	6	9		8	3	0		10	4	6		6	2	3
12 40		0	4	6		8	0	0		9	10	24		5	8	12
13 0		0	2	3		7	9	0		9	5	12		5	2	21
13 20	Venus	20	0	0		7	6	0		9	0	0		4	9	0
13 40		19	6	0		7	3	0		8	6	18		4	3	9
14 0		19	0	0		7	0	0		8	1	6		3	9	18
14 20		18	6	0		6	9	0		7	7	24		3	3	27
14 40		18	0	0		6	6	0		7	2	12		2	10	6

Balance of Vimshottari Dasha from Sidereal Longitude of Moon (contd.)

Long of Moon		Moon in Mesha Simha, Dhanu			Moon in Vrish Kanya, Makar			Moon in Mithun Tula, Kumbh			Moon in Karka Vrishchik, Meena		
°	'		y	m	d	y	m	d	y	m	d	y	m	d
15	0	Venus	17	6	0	Moon	6	3	0	Rahu	6	9	0	Saturn	2	4	15
15	20		17	0	0		6	0	0		6	3	18		1	10	24
15	40		16	6	0		5	9	0		5	10	6		1	5	3
16	0		16	0	0		5	6	0		5	4	24		0	11	12
16	20		15	6	0		5	3	0		4	11	12		0	5	21
16	40		15	0	0		5	0	0		4	6	0	Merc	17	0	0
17	0		14	6	0		4	9	0		4	0	18		16	6	27
17	20		14	0	0		4	6	0		3	7	6		16	1	24
17	40		13	6	0		4	3	0		3	1	24		15	8	21
18	0		13	0	0		4	0	0		2	8	12		15	3	18
18	20		12	6	0		3	9	0		2	3	0		14	10	15
18	40		12	0	0		3	6	0		1	9	18		14	5	12
19	0		11	6	0		3	3	0		1	4	6		14	0	9
19	20		11	0	0		3	0	0		0	10	24		13	7	6
19	40		10	6	0		2	9	0		0	5	12		13	2	3
20	0		10	0	0		2	6	0	Jupiter	16	0	0		12	9	0
20	20		9	6	0		2	3	0		15	7	6		12	3	27
20	40		9	0	0		2	0	0		15	2	12		11	10	24
21	0		8	6	0		1	9	0		14	9	18		11	5	21
21	20		8	0	0		1	6	0		14	4	24		11	0	18
21	40		7	6	0		1	3	0		14	0	0		10	7	15
22	0		7	0	0		1	0	0		13	7	6		10	2	12
22	20		6	6	0		0	9	0		13	2	12		9	9	9
22	40		6	0	0		0	6	0		12	9	18		9	4	6
23	0		5	6	0		0	3	0		12	4	24		8	11	3
23	20		5	0	0	Mars	7	0	0		12	0	0		8	6	0
23	40		4	6	0		6	9	27		11	7	6		8	0	27
24	0		4	0	0		6	7	24		11	2	12		7	7	24
24	20		3	6	0		6	5	21		10	9	18		7	2	21
24	40		3	0	0		6	3	18		10	4	24		6	9	18
25	0		2	6	0		6	1	15		10	0	0		6	4	15
25	20		2	0	0		5	11	12		9	7	6		5	11	12
25	40		1	6	0		5	9	9		9	2	12		5	6	9
26	0		1	0	0		5	7	6		8	9	18		5	1	6
26	20		0	6	0		5	5	3		8	4	24		4	8	3
26	40	Sun	6	0	0		5	3	0		8	0	0		4	3	0
27	0		5	10	6		5	0	27		7	7	6		3	9	27
27	20		5	8	12		4	10	24		7	2	12		3	4	24
27	40		5	6	18		4	8	21		6	9	18		2	11	21
28	0		5	4	24		4	6	18		6	4	24		2	6	18
28	20		5	3	0		4	4	15		6	0	0		2	1	15
28	40		5	1	6		4	2	12		5	7	6		1	8	12
29	0		4	11	12		4	0	9		5	2	12		1	3	9
29	20		4	9	18		3	10	6		4	9	18		0	10	6
29	40		4	7	24		3	8	3		4	4	24		0	5	3
30	0		4	6	0		3	6	0		4	0	0		0	0	0

Proportional Parts for Dasha of Planets

(To be subtracted from the balance of dasha for increase by minutes of the longitude of Moon)

	Ketu (7y)		Ven (20y)		Sun (6y)		Moon (10y)		Mars (7y)		Rahu (18y)		Jup (16y)		Sat (19y)		Mer (17y)		
'	m	d	m	d	m	d	m	d	m	d	m	d	m	d	m	d	m	d	'
1	0	3	0	9	0	3	0	5	0	3	0	8	0	7	0	9	0	8	1
2	0	6	0	18	0	5	0	9	0	6	0	16	0	14	0	17	0	15	2
3	0	9	0	27	0	8	0	14	0	9	0	24	0	22	0	26	0	23	3
4	0	13	1	6	0	11	0	18	0	13	1	2	0	29	1	4	1	1	4
5	0	16	1	15	0	14	0	23	0	16	1	11	1	6	1	13	1	8	5
6	0	19	1	24	0	16	0	27	0	19	1	19	1	13	1	21	1	16	6
7	0	22	2	3	0	19	1	2	0	22	1	27	1	20	2	0	1	24	7
8	0	25	2	12	0	22	1	6	0	25	2	5	1	28	2	8	2	1	8
9	0	28	2	21	0	24	1	11	0	28	2	13	2	5	2	17	2	9	9
10	1	1	3	0	0	27	1	15	1	1	2	21	2	12	2	26	2	17	10
15	1	17	4	15	1	11	2	8	1	17	4	2	3	18	4	8	3	25	15
20	2	3	6	0	1	24	3	0	2	3	5	12	4	24	5	21	5	3	20

Antar Dasha

As maha dasha periods can range from 6 years to 20 years for different planets, it is not possible to arrive at definite predictive conclusions for timing of events in this large span. Hence we must calculate a smaller period called antar dasha or the sub-period (also called bhukti) by the following method.

1. Multiply maha dasha periods of two planets of which maha dasha/antar dasha is required.
2. Multiply last digit of the product by 3 to give us days.
3. Remaining figure of the product gives us months.

Example : Calculate antar dasha of Mars in maha dasha of Rahu

Maha dasha period of Rahu = 18 years

Maha dasha period of Mars = 7 years

Rahu/Mars = 18 × 7 = 126

Multiply the last digit of the product 6 by 3 = 18 days.

The remaining figure of the product is months.

Rahu/Mars = $12^{m}18^{d}$

or $1^{y}0^{m}18^{d}$

Always remember that antar dasha calculation gives the result in months.

Pratyantar Dasha

This is a further smaller period called pratyantar dasha or the sub-sub period. Multiply the maha dasha periods of three planets and divide by 40. This gives pratyantar dasha in days.

Example : Pratyantar dasha of Venus in antar dasha of Rahu and maha dasha of Moon.

$$\text{Moon/Rahu/Venus} = \frac{10 \times 18 \times 20}{40} = 90 \text{ days or } 3 \text{ months}$$

Sookshama Dasha

A further smaller period. Multiply the maha dasha periods of four planets and divide by 200. This gives sookshama dasha in hours.

$$\text{e.g. Ven/Mer/Jup/Sat} = \frac{20 \times 17 \times 16 \times 19}{200} = 516.8 \text{ hours.}$$

or 21 days, 12 hours, 48 minutes.

Prana Dasha

Multiply the maha dasha period of 5 planets and divide by 400. This gives prana dasha in minutes.

$$\text{e.g. Ven/Ven/Rah/Sat/Moon} = \frac{20 \times 20 \times 18 \times 19 \times 10}{400} = 3420'$$

or 2 days and 9 hours.

It may be understood that the order of dashas and antar dashas etc follows the cycle of Vimshottari dasha. In practice it is sufficient to calculate upto pratyantar dasha only. Sookshama and Prana dashas are normally not calculated. The first antar dasha within a maha dasha is always of the same planet. For example in the maha dasha of Venus the first antar is of Venus and then the same order continues till the last antar which will be of Ketu. Same is the case with further smaller periods explained above.

Vimshottari dasha tables upto Antardasha are given on next page for easy reference.

Vimshottari Dasha and Antardasha

Antardasha	Sun 6 years						Moon 10 years						Mars 7 years					
	Sub Periods			Total			Sub Periods			Total			Sub Periods			Total		
	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d
Sun	0	3	18	0	3	18	–	–	–	–	–	–	–	–	–	–	–	–
Moon	0	6	0	0	9	18	0	10	0	0	10	0	–	–	–	–	–	–
Mars	0	4	6	1	1	24	0	7	0	1	5	0	0	4	27	0	4	27
Rahu	0	10	24	2	0	18	1	6	0	2	11	0	1	0	18	1	5	15
Jupiter	0	9	18	2	10	6	1	4	0	4	3	0	0	11	6	2	4	21
Saturn	0	11	12	3	9	18	1	7	0	5	10	0	1	1	9	3	6	0
Mercury	0	10	6	4	7	24	1	5	0	7	3	0	0	11	27	4	5	27
Ketu	0	4	6	5	0	0	0	7	0	7	10	0	0	4	27	4	10	24
Venus	1	0	0	6	0	0	1	8	0	9	6	0	1	2	0	6	0	24
Sun	–	–	–	–	–	–	0	6	0	10	0	0	0	4	6	6	5	0
Moon	–	–	–	–	–	–	–	–	–	–	–	–	0	7	0	7	0	0

Antardasha	Rahu 18 years						Jupiter 16 years						Saturn 19 years					
	Sub Periods			Total			Sub Periods			Total			Sub Periods			Total		
	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d
Rahu	2	8	12	2	8	12	–	–	–	–	–	–	–	–	–	–	–	–
Jupiter	2	4	24	5	1	6	2	1	18	2	1	18	–	–	–	–	–	–
Saturn	2	10	6	7	11	12	2	6	12	4	8	0	3	0	3	3	0	3
Mercury	2	6	18	10	6	0	2	3	6	6	11	6	2	8	9	5	8	12
Ketu	1	0	18	11	6	18	0	11	6	7	10	12	1	1	9	6	9	21
Venus	3	0	0	14	6	18	2	8	0	10	6	12	3	2	0	9	11	21
Sun	0	10	24	15	5	12	0	9	18	11	4	0	0	11	12	10	11	3
Moon	1	6	0	16	11	12	1	4	0	12	8	0	1	7	0	12	6	3
Mars	1	0	18	18	0	0	0	11	6	13	7	6	1	1	9	13	7	12
Rahu	–	–	–	–	–	–	2	4	24	16	0	0	2	10	6	6	5	18
Jupiter	–	–	–	–	–	–	–	–	–	–	–	–	2	6	12	19	0	0

Antardasha	Mercury 17 years						Ketu 7 years						Venus 20 years					
	Sub Periods			Total			Sub Periods			Total			Sub Periods			Total		
	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d	y	m	d
Mercury	2	4	27	2	4	27	–	–	–	–	–	–	–	–	–	–	–	–
Ketu	0	11	27	3	4	24	0	4	27	0	4	27	–	–	–	–	–	–
Venus	2	10	0	6	2	24	1	2	0	1	6	27	3	4	0	3	4	0
Sun	0	10	6	7	1	0	0	4	6	1	11	3	1	0	0	4	4	0
Moon	1	5	0	8	6	0	0	7	0	2	6	3	1	8	0	6	0	0
Mars	0	11	27	9	5	27	0	4	27	2	11	0	1	2	0	7	2	0
Rahu	2	6	18	12	0	15	1	0	18	3	11	18	3	0	0	10	2	0
Jupiter	2	3	6	14	3	21	0	11	6	4	10	24	2	8	0	12	10	0
Saturn	2	8	9	17	0	0	1	1	9	6	0	3	3	2	0	16	0	0
Mercury	–	–	–	–	–	–	0	11	27	7	0	0	2	10	0	18	10	0
Ketu	–	–	–	–	–	–	–	–	–	–	–	–	1	2	0	20	0	0

Calculation of present dasha

	y m d
First calculate balance of dasha at birth, say Venus	13-8-12
Add date of birth of native (yy followed by mm & dd)	54-1-15
Venus upto	67-9-27
Sun upto (After adding 6 years)	73-9-27
Moon upto (After adding 10 years)	83-9-27
Mars upto (After adding 7 years)	90-9-27

As the next maha dasha of Rahu is of 18 years, the present running dasha is of Rahu which has started on 27-9-1990 and will continue upto 27-9-2008. In the same manner antar dasha and pratyantar dasha periods are added to reach the present antar dasha and pratyantar dasha respectively.

Ketu Dasha 7 Year

Antardashas

	Ketu	Ven	Sun	Moon	Mars	Rahu	Jup	Sat	Mer	Total
Year	0	1	0	0	0	1	0	1	0	7
Month	4	2	4	7	4	0	11	1	11	0
Day	27	0	6	0	27	18	6	9	27	0

Pratyantar dashas

1.	Ketu/Ketu			2.	Ketu/Ven			3.	Ketu/Sun		
	m	d	h		m	d	h		m	d	h
Ketu	0	8	13.8	Ven	2	10	0	Sun	0	6	7.2
Ven	0	24	12.0	Sun	0	21	0	Moon	0	10	12.0
Sun	0	7	8.4	Moon	1	5	0	Mars	0	7	8.4
Moon	0	12	6.0	Mars	0	24	12	Rahu	0	18	21.6
Mars	0	8	13.8	Rahu	2	3	0	Jup	0	16	19.2
Rahu	0	22	1.2	Jup	1	26	0	Sat	0	19	22.8
Jup	0	19	14.4	Sat	2	6	12	Mer	0	17	20.4
Sat	0	23	6.6	Mer	1	29	12	Ketu	0	7	8.4
Mer	0	20	19.8	Ketu	0	24	12	Ven	0	21	0.0
Total	4	27	0.0	Total	14	0	0	Total	4	6	0.0

4.	Ketu/Moon			5.	Ketu/Mars			6.	Ketu/Rahu		
	m	d	h		m	d	h		m	d	h
Moon	0	17	12.0	Mars	0	8	13.8	Rahu	1	26	16.8
Mars	0	12	6.0	Rahu	0	22	1.2	Jup	1	20	9.6
Rahu	1	1	12.0	Jup	0	19	14.4	Sat	1	29	20.4
Jup	0	28	0.0	Sat	0	23	6.6	Mer	1	23	13.2
Sat	1	3	6.0	Mer	0	20	19.8	Ketu	0	22	1.2
Mer	0	29	18.0	Ketu	0	8	13.8	Ven	2	3	0.0
Ketu	0	12	6.0	Ven	0	24	12.0	Sun	0	18	21.6
Ven	1	5	0.0	Sun	0	7	8.4	Moon	1	1	12.0
Sun	0	10	12.0	Moon	0	12	6.0	Mars	0	22	1.2
Total	7	0	0.0	Total	4	27	0.0	Total	12	18	0.0

7.	Ketu/Jup			8.	Ketu/Sat			9.	Ketu/Mer		
	m	d	h		m	d	h		m	d	h
Jup	1	14	19.2	Sat	2	3	4.2	Mer	1	20	13.8
Sat	1	23	4.8	Mer	1	26	12.6	Ketu	0	20	19.8
Mer	1	17	14.4	Ketu	0	23	6.6	Ven	1	29	12.0
Ketu	0	19	14.4	Ven	2	6	12.0	Sun	0	17	20.4
Ven	1	26	0.0	Sun	0	19	22.8	Moon	0	29	18.0
Sun	0	16	19.2	Moon	1	3	6.0	Mars	0	20	19.8
Moon	0	28	0.0	Mars	0	23	6.6	Rahu	1	23	13.2
Mars	0	19	14.4	Rahu	1	29	20.4	Jup	1	17	14.4
Rahu	1	20	9.6	Jup	1	23	4.8	Sat	1	26	12.6
Total	11	6	0.0	Total	13	9	0.0	Total	11	27	0.0

Venus Dasha 20 Year

Antardashas

	Ven	Sun	Moon	Mars	Rahu	Jup	Sat	Mer	Ketu	Total
Year	3	1	1	1	3	2	3	2	1	20
Month	4	0	8	2	0	8	2	10	2	0
Day	0	0	0	0	0	0	0	0	0	0

Pratyantar dashas

1.	Ven/Ven			2.	Ven/Sun			3.	Ven/Moon		
	m	d	h		m	d	h		m	d	h
Ven	6	20	0	Sun	0	18	0	Moon	1	20	0
Sun	2	0	0	Moon	1	0	0	Mars	1	5	0
Moon	3	10	0	Mars	0	21	0	Rahu	3	0	0
Mars	2	10	0	Rahu	1	24	0	Jup	2	20	0
Rahu	6	0	0	Jup	1	18	0	Sat	3	5	0
Jup	5	10	0	Sat	1	27	0	Mer	2	25	0
Sat	6	10	0	Mer	1	21	0	Ketu	1	5	0
Mer	5	20	0	Ketu	0	21	0	Ven	3	10	0
Ketu	2	10	0	Ven	2	0	0	Sun	1	0	0
Total	40	0	0	Total	12	0	0	Total	20	0	0

4.	Ven/Mars			5.	Ven/Rahu			6.	Ven/Jup		
	m	d	h		m	d	h		m	d	h
Mars	0	24	12	Rahu	5	12	0	Jup	4	8	0
Rahu	2	3	0	Jup	4	24	0	Sat	5	2	0
Jup	1	26	0	Sat	5	21	0	Mer	4	16	0
Sat	2	6	12	Mer	5	3	0	Ketu	1	26	0
Mer	1	29	12	Ketu	2	3	0	Ven	5	10	0
Ketu	0	24	12	Ven	6	0	0	Sun	1	18	0
Ven	2	10	0	Sun	1	24	0	Moon	2	20	0
Sun	0	21	0	Moon	3	0	0	Mars	1	26	0
Moon	1	5	0	Mars	2	3	0	Rahu	4	24	0
Total	14	0	0	Total	36	0	0	Total	32	0	0

7.	Ven/Sat			8.	Ven/Mer			9.	Ven/Ketu		
	m	d	h		m	d	h		m	d	h
Sat	6	0	12	Mer	4	24	12	Ketu	0	24	12
Mer	5	11	12	Ketu	1	29	12	Ven	2	10	0
Ketu	2	6	12	Ven	5	20	0	Sun	0	21	0
Ven	6	10	0	Sun	1	21	0	Moon	1	5	0
Sun	1	27	0	Moon	2	25	0	Mars	0	24	12
Moon	3	5	0	Mars	1	29	12	Rahu	2	3	0
Mars	2	6	12	Rahu	5	3	0	Jup	1	26	0
Rahu	5	21	0	Jup	4	16	0	Sat	2	6	12
Jup	5	2	0	Sat	5	11	12	Mer	1	29	12
Total	38	0	0	Total	34	0	0	Total	14	0	0

Sun Dasha 6 Year

Antardashas

	Sun	Moon	Mars	Rahu	Jup	Sat	Mer	Ketu	Ven	Total
Year	0	0	0	0	0	0	0	0	1	6
Month	3	6	4	10	9	11	10	4	0	0
Day	18	0	6	24	18	12	6	6	0	0

Pratyantar dashas

1.	Sun/Sun			2.	Sun/Moon			3.	Sun/Mars		
	m	d	h		m	d	h		m	d	h
Sun	0	5	9.6	Moon	0	15	0	Mars	0	7	8.4
Moon	0	9	0.0	Mars	0	10	12	Rahu	0	18	21.6
Mars	0	6	7.2	Rahu	0	27	0	Jup	0	16	19.2
Rahu	0	16	4.8	Jup	0	24	0	Sat	0	19	22.8
Jup	0	14	9.6	Sat	0	28	12	Mer	0	17	20.4
Sat	0	17	2.4	Mer	0	25	12	Ketu	0	7	8.4
Mer	0	15	7.2	Ketu	0	10	12	Ven	0	21	0.0
Ketu	0	6	7.2	Ven	1	0	0	Sun	0	6	7.2
Ven	0	18	0.0	Sun	0	9	0	Moon	0	10	12.0
Total	3	18	0.0	Total	6	0	0	Total	4	6	0.0

4.	Sun/Rahu			5.	Sun/Jup			6.	Sun/Sat		
	m	d	h		m	d	h		m	d	h
Rahu	1	18	14.4	Jup	1	8	9.6	Sat	1	24	3.6
Jup	1	13	4.8	Sat	1	15	14.4	Mer	1	18	10.8
Sat	1	21	7.2	Mer	1	10	19.2	Ketu	0	19	22.8
Mer	1	15	21.6	Ketu	0	16	19.2	Ven	1	27	0.0
Ketu	0	18	21.6	Ven	1	18	0.0	Sun	0	17	0.4
Ven	1	24	0.0	Sun	0	14	9.6	Moon	0	28	12.0
Sun	0	16	4.8	Moon	0	24	0.0	Mars	0	19	22.8
Moon	0	27	0.0	Mars	0	16	19.2	Rahu	1	21	7.2
Mars	0	18	21.6	Rahu	1	13	4.8	Jup	1	15	14.6
Total	10	24	0.0	Total	9	18	0.0	Total	11	12	0.0

7.	Sun/Mer			8.	Sun/Ketu			9.	Sun/Ven		
	m	d	h		m	d	h		m	d	h
Mer	1	13	8.4	Ketu	0	7	8.4	Ven	2	0	0
Ketu	0	17	20.4	Ven	0	21	0.0	Sun	0	18	0
Ven	1	21	0.0	Sun	2	6	7.2	Moon	1	0	0
Sun	0	15	7.2	Moon	0	10	12.0	Mars	0	21	0
Moon	0	25	12.0	Mars	0	7	8.4	Rahu	1	24	0
Mars	0	17	20.4	Rahu	0	18	21.6	Jup	1	18	0
Rahu	1	15	21.6	Jup	0	16	19.6	Sat	1	27	0
Jup	1	10	19.2	Sat	0	19	22.8	Mer	1	21	0
Sat	1	18	10.8	Mer	0	17	20.4	Ketu	0	21	0
Total	10	6	0.0	Total	4	6	0.0	Total	12	0	0

Moon Dasha 10 Year

Antardashas

	Moon	Mars	Rahu	Jup	Sat	Mer	Ketu	Ven	Sun	Total
Year	0	0	1	1	1	1	0	1	0	10
Month	10	7	6	4	7	5	7	8	6	0
Day	0	0	0	0	0	0	0	0	0	0

Pratyantar dashas

1.	Moon/Moon			2.	Moon/Mars			3.	Moon/Rahu		
	m	d	h		m	d	h		m	d	h
Moon	0	25	0	Mars	0	12	6	Rahu	2	21	0
Mars	0	17	12	Rahu	1	1	12	Jup	2	12	0
Rahu	1	15	0	Jup	0	28	0	Sat	2	25	12
Jup	1	10	0	Sat	1	3	6	Mer	2	16	12
Sat	1	17	12	Mer	0	29	18	Ketu	1	1	12
Mer	1	12	12	Ketu	0	12	6	Ven	3	0	12
Ketu	0	17	12	Ven	1	5	0	Sun	0	27	0
Ven	1	20	0	Sun	0	10	12	Moon	1	15	0
Sun	0	15	0	Moon	0	17	12	Mars	1	1	0
Total	10	0	0	Total	7	0	0	Total	18	0	0

4.	Moon/Jup			5.	Moon/Sat			6.	Moon/Mer		
	m	d	h		m	d	h		m	d	h
Jup	2	4	0	Sat	3	0	6	Mer	2	12	6
Sat	2	16	0	Mer	2	20	18	Ketu	0	29	18
Mer	2	8	0	Ketu	1	3	6	Ven	2	25	0
Ketu	0	28	0	Ven	3	5	0	Sun	0	25	12
Ven	2	20	0	Sun	0	28	12	Moon	1	12	12
Sun	0	24	0	Moon	1	17	12	Mars	0	29	18
Moon	1	10	0	Mars	1	3	6	Rahu	2	16	12
Mars	0	28	0	Rahu	2	25	12	Jup	2	8	0
Rahu	2	12	0	Jup	2	16	0	Sat	2	20	18
Total	16	0	0	Total	19	0	0	Total	17	0	0

7.	Moon/Ketu			8.	Moon/Ven			9.	Moon/Sun		
	m	d	h		m	d	h		m	d	h
Ketu	0	12	6	Ven	3	10	0	Sun	0	9	0
Ven	1	5	0	Sun	1	0	0	Moon	0	15	0
Sun	0	10	12	Moon	1	20	0	Mars	0	10	12
Moon	0	17	12	Mars	1	5	0	Rahu	0	27	0
Mars	0	12	6	Rahu	3	0	0	Jup	0	24	0
Rahu	1	1	12	Jup	2	20	0	Sat	0	28	12
Jup	0	28	0	Sat	3	5	0	Mer	0	25	12
Sat	1	3	6	Mer	2	25	0	Ketu	0	10	12
Mer	0	29	18	Ketu	1	5	0	Ven	1	0	0
Total	7	0	0	Total	20	0	0	Total	6	0	0

Mars Dasha 7 Year

Antardashas

	Mars	Rahu	Jup	Sat	Mer	Ketu	Ven	Sun	Moon	Total
Year	0	1	0	1	0	0	1	0	0	7
Month	4	0	11	1	11	4	2	4	7	0
Day	27	18	6	9	27	27	0	6	0	0

Pratyantar dashas

1.	Mars/Mars			2.	Mars/Rahu			3.	Mars/Jup		
	m	d	h		m	d	h		m	d	h
Mars	0	8	13.8	Rahu	1	26	16.8	Jup	1	14	19.2
Rahu	0	22	1.2	Jup	1	20	9.6	Sat	1	23	4.8
Jup	0	19	14.4	Sat	1	29	20.4	Mer	1	17	14.4
Sat	0	23	6.6	Mer	1	23	13.2	Ketu	0	19	14.4
Mer	0	20	19.8	Ketu	0	22	1.2	Ven	1	26	0.0
Ketu	0	8	13.8	Ven	2	3	0.0	Sun	0	16	19.2
Ven	0	24	12.0	Sun	0	18	21.6	Moon	0	28	0.0
Sun	0	7	8.4	Moon	1	1	12.0	Mars	0	19	14.4
Moon	0	12	6.0	Mars	0	22	1.2	Rahu	1	20	9.6
Total	4	27	0.0	Total	12	18	0.0	Total	11	6	0.0

4.	Mars/Sat			5.	Mars/Mer			6.	Mars/Ketu		
	m	d	h		m	d	h		m	d	h
Sat	2	3	4.2	Mer	1	20	13.8	Ketu	0	8	13.8
Mer	1	26	12.6	Ketu	0	20	19.8	Ven	0	24	12.0
Ketu	0	23	6.6	Ven	1	29	12.0	Sun	0	7	8.4
Ven	2	6	12.0	Sun	0	17	20.4	Moon	0	12	6.0
Sun	0	19	22.8	Moon	0	29	18.0	Mars	0	3	13.8
Moon	1	3	6.0	Mars	0	20	19.8	Rahu	0	22	1.2
Mars	0	23	6.6	Rahu	1	23	13.2	Jup	0	19	14.4
Rahu	1	29	20.4	Jup	1	17	14.4	Sat	0	23	6.6
Jup	1	23	4.8	Sat	1	26	12.6	Mer	0	20	19.8
Total	13	9	0.0	Total	11	27	0.0	Total	4	27	0.0

7.	Mars/Ven			8.	Mars/Sun			9.	Mars/Moon		
	m	d	h		m	d	h		m	d	h
Ven	2	20	0.0	Sun	0	6	7.2	Moon	0	17	12.0
Sun	0	21	0.0	Moon	0	10	12.0	Mars	0	12	6.0
Moon	1	5	0.0	Mars	0	7	8.4	Rahu	1	1	12.0
Mars	0	24	12.0	Rahu	0	18	21.6	Jup	0	28	0.0
Rahu	2	3	0.0	Jup	0	16	19.2	Sat	1	3	6.0
Jup	1	26	0.0	Sat	0	19	22.8	Mer	0	29	18.0
Sat	2	6	12.0	Mer	0	17	20.4	Ketu	0	12	6.0
Mer	1	29	12.0	Ketu	0	7	8.4	Ven	1	5	0.0
Ketu	0	24	12.0	Ven	0	21	0.0	Sun	0	10	12.0
Total	14	0	0.0	Total	4	6	0.0	Total	7	0	0.0

Rahu Dasha 18 Year

Antardashas

	Rahu	Jup	Sat	Mer	Ketu	Ven	Sun	Moon	Mars	Total
Year	2	2	2	2	1	3	0	1	1	18
Month	8	4	10	6	0	0	10	6	0	0
Day	12	24	6	18	18	0	24	0	18	0

Pratyantar dashas

1.	Rahu/Rahu			2.	Rahu/Jup			3.	Rahu/Sat		
	m	d	h		m	d	h		m	d	h
Rahu	4	25	19.2	Jup	3	25	4.8	Sat	5	12	10.8
Jup	4	9	14.4	Sat	4	16	19.2	Mer	4	25	8.4
Sat	5	3	21.6	Mer	4	2	9.6	Ketu	1	29	20.4
Mer	4	17	16.8	Ketu	1	20	9.6	Ven	5	21	0.0
Ketu	1	26	16.8	Ven	4	24	0.0	Sun	1	21	7.2
Ven	5	12	0.0	Sun	1	13	4.8	Moon	2	25	12.0
Sun	1	18	14.4	Moon	2	12	0.0	Mars	1	29	20.4
Moon	2	21	0.0	Mars	1	20	9.6	Rahu	5	3	21.6
Mars	1	26	16.8	Rahu	4	9	14.4	Jup	4	16	19.2
Total	32	12	0.0	Total	28	24	0.0	Total	34	6	0.0

4.	Rahu/Mer			5.	Rahu/Ketu			6.	Rahu/Ven		
	m	d	h		m	d	h		m	d	h
Mer	4	10	1.2	Ketu	0	22	1.2	Ven	6	0	0.0
Ketu	1	23	13.2	Ven	2	3	0.0	Sun	1	24	0.0
Ven	5	3	0.0	Sun	0	18	21.6	Moon	3	0	0.0
Sun	1	15	21.6	Moon	1	1	12.0	Mars	2	3	0.0
Moon	2	16	12.0	Mars	0	22	1.2	Rahu	5	12	0.0
Mars	1	23	13.2	Rahu	1	26	16.8	Jup	4	24	0.0
Rahu	4	17	16.8	Jup	1	20	9.6	Sat	5	21	0.0
Jup	4	2	9.6	Sat	1	29	20.4	Mer	5	3	0.0
Sat	4	25	8.4	Mer	1	23	13.2	Ketu	2	3	0.0
Total	30	18	0.0	Total	12	18	0.0	Total	36	0	0.0

7.	Rahu/Sun			8.	Rahu/Moon			9.	Rahu/Mars		
	m	d	h		m	d	h		m	d	h
Sun	0	16	4.8	Moon	1	15	0.0	Mars	0	22	1.2
Moon	0	27	0.0	Mars	1	1	12.0	Rahu	1	26	16.8
Mars	0	18	21.6	Rahu	2	21	0.0	Jup	1	20	9.6
Rahu	1	18	14.4	Jup	2	12	0.0	Sat	1	29	20.4
Jup	1	13	4.8	Sat	2	25	12.0	Mer	1	23	13.2
Sat	1	21	7.2	Mer	2	16	12.0	Ketu	0	22	1.2
Mer	1	15	21.6	Ketu	1	1	12.0	Ven	2	3	0.0
Ketu	0	18	21.6	Ven	3	0	0.0	Sun	0	18	21.6
Ven	1	24	0.0	Sun	0	27	0.0	Moon	1	1	12.0
Total	10	24	0.0	Total	18	0	0.0	Total	12	18	0.0

Jupiter Dasha 16 Year

Antardashas

	Jup	Sat	Mer	Ketu	Ven	Sun	Moon	Mars	Rahu	Total
Year	2	2	2	0	2	0	1	0	2	16
Month	1	6	3	11	8	9	4	11	4	0
Day	18	12	6	6	0	18	0	6	24	0

Pratyantar dashas

1.	Jup/Jup			2.	Jup/Sat			3.	Jup/Mer		
	m	d	h		m	d	h		m	d	h
Jup	3	12	9.6	Sat	4	24	9.6	Mer	3	25	14.4
Sat	4	1	14.4	Mer	4	9	4.8	Ketu	1	17	14.4
Mer	3	18	19.2	Ketu	1	23	4.8	Ven	4	16	0.0
Ketu	1	14	19.2	Ven	5	2	0.0	Sun	1	10	19.2
Ven	4	8	0.0	Sun	1	15	14.4	Moon	2	8	0.0
Sun	1	8	9.6	Moon	2	16	0.0	Mars	1	17	14.4
Moon	2	4	0.0	Mars	1	23	4.8	Rahu	4	2	9.6
Mars	1	14	19.2	Rahu	4	16	19.2	Jup	3	18	19.2
Rahu	3	25	4.8	Jup	4	1	14.4	Sat	4	9	4.8
Total	25	18	0.0	Total	30	12	0.0	Total	27	6	0.0

4.	Jup/Ketu			5.	Jup/Ven			6.	Jup/Sun		
	m	d	h		m	d	h		m	d	h
Ketu	0	19	14.4	Ven	5	10	0.0	Sun	0	14	9.6
Ven	1	26	0.0	Sun	1	18	0.0	Moon	0	24	0.0
Sun	0	16	19.2	Moon	2	20	0.0	Mars	0	16	19.2
Moon	0	28	0.0	Mars	1	26	0.0	Rahu	1	13	4.8
Mars	0	19	14.4	Rahu	4	24	0.0	Jup	1	8	9.6
Rahu	1	20	9.6	Jup	4	8	0.0	Sat	1	15	14.4
Jup	1	14	19.2	Sat	5	2	0.0	Mer	1	10	19.2
Sat	1	23	4.8	Mer	4	16	0.0	Ketu	0	16	19.2
Mer	1	17	14.4	Ketu	1	26	0.0	Ven	1	18	0.0
Total	11	6	0.0	Total	32	0	0.0	Total	9	8	0.0

7.	Jup/Moon			8.	Jup/Mars			9.	Jup/Rahu		
	m	d	h		m	d	h		m	d	h
Moon	1	10	0.0	Mars	0	19	14.4	Rahu	4	9	14.4
Mars	0	28	0.0	Rahu	1	20	14.4	Jup	3	25	4.8
Rahu	2	12	0.0	Jup	1	14	19.2	Sat	4	16	19.2
Jup	2	4	0.0	Sat	1	23	4.8	Mer	4	2	9.6
Sat	2	16	0.0	Mer	1	17	14.4	Ketu	1	20	9.6
Mer	2	8	0.0	Ketu	1	19	14.4	Ven	4	24	0.0
Ketu	0	28	0.0	Ven	1	26	0.0	Sun	1	13	4.8
Ven	2	20	0.0	Sun	0	16	19.2	Moon	2	12	0.0
Sun	0	24	0.0	Moon	0	28	0.0	Mars	1	20	9.6
Total	16	0	0.0	Total	11	6	0.0	Total	28	24	0.0

Saturn Dasha 19 Year

Antardashas

	Sat	Mer	Ketu	Ven	Sun	Moon	Mars	Rahu	Jup	Total
Year	3	2	1	3	0	1	1	2	2	19
Month	0	8	1	2	11	7	1	10	6	0
Day	3	9	9	0	12	0	9	6	12	0

Pratyantar dashas

1.	Sat/Sat			2.	Sat/Mer			3.	Sat/Ketu		
	m	d	h		m	d	h		m	d	h
Sat	5	21	11.4	Mer	4	17	6.6	Ketu	0	23	6.6
Mer	5	3	10.2	Ketu	1	26	12.6	Ven	2	6	12.0
Ketu	2	3	4.2	Ven	5	11	12.0	Sun	0	19	22.8
Ven	6	0	12.0	Sun	1	18	10.8	Moon	1	3	6.0
Sun	1	24	3.6	Moon	2	20	18.0	Mars	0	23	6.6
Moon	3	0	6.0	Mars	1	26	12.6	Rahu	1	29	20.4
Mars	2	3	4.2	Rahu	4	25	8.4	Jup	1	23	4.8
Rahu	5	12	10.8	Jup	4	9	4.8	Sat	2	3	4.2
Jup	4	24	9.6	Sat	5	3	10.2	Mer	1	26	12.6
Total	36	3	0.0	Total	32	9	0.0	Total	13	9	0.0

4.	Sat/Ven			5.	Sat/Sun			6.	Sat/Moon		
	m	d	h		m	d	h		m	d	h
Ven	6	10	0.0	Sun	0	17	2.4	Moon	1	17	12.0
Sun	1	27	0.0	Moon	0	28	12.0	Mars	1	3	6.0
Moon	3	5	0.0	Mars	0	19	22.8	Rahu	2	25	12.0
Mars	2	6	12.0	Rahu	1	21	7.2	Jup	2	16	0.0
Rahu	5	21	0.0	Jup	1	15	14.4	Sat	3	0	6.0
Jup	5	2	0.0	Sat	1	24	3.6	Mer	2	20	18.0
Sat	6	0	12.0	Mer	1	18	10.8	Ketu	1	3	6.0
Mer	5	11	12.0	Ketu	0	19	22.8	Ven	3	5	0.0
Ketu	2	6	12.0	Ven	1	27	0.0	Sun	0	28	12.0
Total	38	0	0.0	Total	11	12	0.0	Total	19	0	0.0

7.	Sat/Mars			8.	Sat/Rahu			9.	Sat/Jup		
	m	d	h		m	d	h		m	d	h
Mars	0	23	6.6	Rahu	5	3	21.6	Jup	4	1	14.4
Rahu	1	29	20.4	Jup	4	16	19.2	Sat	4	24	9.6
Jup	1	23	4.8	Sat	5	12	10.8	Mer	4	9	4.8
Sat	2	3	4.2	Mer	4	25	8.4	Ketu	1	23	4.8
Mer	1	26	12.6	Ketu	1	29	20.4	Ven	5	2	0.0
Ketu	0	23	6.6	Ven	5	21	0.0	Sun	1	15	14.4
Ven	2	6	12.0	Sun	1	21	7.2	Moon	2	16	0.0
Sun	0	19	22.8	Moon	2	25	12.0	Mars	1	23	4.8
Moon	1	3	6.0	Mars	1	29	20.4	Rahu	4	16	19.2
Total	13	9	0.0	Total	34	6	0.0	Total	30	12	0.0

Mercury Dasha 17 Year

Antardashas

	Mer	Ketu	Ven	Sun	Moon	Mars	Rahu	Jup	Sat	Total
Year	2	0	2	0	1	0	2	2	2	17
Month	4	11	10	10	5	11	6	3	8	0
Day	27	27	0	6	0	27	18	6	9	0

Pratyantar dashas

1.	Mer/Mer			2.	Mer/Ketu			3.	Mer/Ven		
	m	d	h		m	d	h		m	d	h
Mer	4	2	19.8	Ketu	0	20	19.8	Ven	5	20	0.0
Ketu	1	20	13.8	Ven	1	29	12.0	Sun	1	21	0.0
Ven	4	24	12.0	Sun	0	17	20.4	Moon	2	25	0.0
Sun	1	13	3.4	Moon	0	29	18.0	Mars	1	29	12.0
Moon	2	12	6.0	Mars	0	20	19.8	Rahu	5	3	0.0
Mars	1	20	13.8	Rahu	1	23	13.2	Jup	4	16	0.0
Rahu	4	10	1.2	Jup	1	17	14.4	Sat	5	11	12.0
Jup	3	25	14.4	Sat	1	26	12.6	Mer	4	24	12.0
Sat	4	17	6.6	Mer	1	20	13.8	Ketu	1	29	12.0
Total	28	27	0.0	Total	11	27	0.0	Total	34	0	0.0

4.	Mer/Sun			5.	Mer/Moon			6.	Mer/Mars		
	m	d	h		m	d	h		m	d	h
Sun	0	15	7.2	Moon	1	12	12	Mars	0	20	19.8
Moon	0	25	12.0	Mars	0	29	18	Rahu	1	23	13.2
Mars	0	17	20.4	Rahu	2	16	12	Jup	1	17	14.4
Rahu	1	15	21.6	Jup	2	8	0	Sat	1	26	12.6
Jup	1	10	19.2	Sat	2	20	18	Mer	1	20	13.8
Sat	1	18	10.8	Mer	2	12	6	Ketu	0	20	19.8
Mer	1	13	8.4	Ketu	0	29	18	Ven	1	29	12.0
Ketu	0	17	20.4	Ven	2	25	0	Sun	0	17	20.4
Ven	1	21	0.0	Sun	0	25	12	Moon	0	29	18.0
Total	10	6	0.0	Total	17	0	0	Total	11	27	0.0

7.	Mer/Rahu			8.	Mer/Jup			9.	Mer/Sat		
	m	d	h		m	d	h		m	d	h
Rahu	4	17	16.8	Jup	3	18	19.2	Sat	5	3	10.2
Jup	4	2	9.6	Sat	4	9	4.8	Mer	4	17	6.6
Sat	4	25	8.4	Mer	3	25	14.4	Ketu	1	26	12.6
Mer	4	10	1.2	Ketu	1	17	14.4	Ven	5	11	12.0
Ketu	1	23	13.2	Ven	4	16	0.0	Sun	1	18	10.8
Ven	5	3	0.0	Sun	1	10	19.2	Moon	2	20	18.0
Sun	1	15	21.6	Moon	2	8	0.0	Mars	1	26	12.6
Moon	2	16	12.0	Mars	1	17	14.4	Rahu	4	25	8.5
Mars	1	23	13.2	Rahu	4	2	9.6	Jup	4	9	4.8
Total	30	18	0.0	Total	27	6	0.0	Total	32	9	0.0

CHAPTER X

CASTING OF HOROSCOPE BY TRADITIONAL METHOD

"Bathing at all the holy places and kindness to all beings, these are equal. Perhaps kindness is better."

- Mahabharata, V. 35.2.

"Fasting and penance, however much they weaken the body, cannot destroy sins."

- Mahabharata, III. 199.102

When we say *traditional method* we mean the method which was adopted by our ancestors and which is based on old beliefs and practices.

In the previous chapter we have dealt in detail the modern method of casting of horoscope. For this purpose we have relied on an accurate table of ascendants as also an accurate ephemeris based on chitrapaksha ayanamsha. In casting of horoscope by traditional method, we likewise require an accurate panchang. Here lies a note of caution.

In India hundreds of panchangas are published and all of them are different in terms of their contents. Each panchang gives information on lagna, tithi, nakshatra etc. based on the place of its publication. Therefore a panchang published say from Kashi (now Varanasi) will differ from any other published from another location. Even that information which is supposed to be uniform e.g. the longitude of planets on a particular day, varies. Not to talk of different ayanamshas used which is again a point of controversy.

In short we can say that using a panchang for another location requires corrections which may be complicated and time consuming.

Nevertheless we proceed to explain the traditional method, in short, covering the basic concepts involved.

Isht Kaal

In Hindu system the time elapsed from sunrise of the day of birth to the time of birth is known as Isht kaal. It is also known as *Suryodayaishtam*. The first step is to find out the accurate time of sunrise of the day of birth at which the sayana longitude of Sun must be noted.

Rashimaan

In chapter III oblique ascension or rashimaan has been explained and table of rashimaans for all latitudes upto 60° north and south have been given. We can convert the rashimaans of any place from hours/minutes to ghati/pal. The latitude of Delhi is 28°39' North. For the sake of convenience and to explain the concept, we have taken the rashimaan for 29° north latitude. But for accurate calculations, exact rashimaan can be obtained by method of interpolation.

Sign	*Rashimaan at Delhi*			*Rashimaan at Delhi*		*Rashimaan at Delhi*
	h	*m*	*s*	*Ghati*	*Pal*	*Pal*
Aries	1	24	43.9	3	32	212
Taurus	1	38	23.2	4	06	246
Gemini	2	00	08.16	5	00	300
Cancer	2	17	51.8	5	45	345
Leo	2	20	56.8	5	52	352
Virgo	2	17	55.9	5	45	345
Libra	2	17	55.9	5	45	345
Scorpio	2	20	56.8	5	52	352
Sagittarius	2	17	51.8	5	45	345
Capricorn	2	00	08.16	5	00	300
Aquarius	1	38	23.2	4	06	246
Pisces	1	24	43.9	3	32	212

Rashimaan is the time taken by each sign to rise its extent of 30° fully in the eastern horizon. This varies with latitude of the place. The traditional unit of measurement of rashimaan is

Asu. 1 asu is equal to 4 seconds and 6 asus are equal to 24 seconds or 1 pal. However from the table of oblique ascensions given in chapter III we can calculate the rashimaan for any latitude.

Calculation of Lagna at Delhi

As explained earlier, for each latitude rashimaan will differ. Let us take an example of calculation of lagna for a native born on 1st July 1992 using Vishwavijay panchang.

Sunrise time 5:30 AM
Time of birth 8:30 AM

Isht kaal 8:30 - 5:30	=	3:00 hours
We can convert this into ghati/pal by multiplying with 2.5	=	7 ghati 30 pal.
Longitude of Sun at sunrise (5:30 AM)	=	$2^s15°39'10"$
Add ayanamsha	=	23°45'25"
Sayana longitude of Sun	=	$3^s09°24'35"$

Hence within the rashi say 9°25' have already elapsed and 20°35' is the remaining period. From the rashimaans calculated for Delhi we have seen that :

30° of Cancer rises in	=	345 pal
20°35' (or 20.6°) will rise in	=	$\frac{345 \times 20.6}{30}$ = 237 pal
or balance of Cancer	=	3 ghati 57 pal
Add rising time of Leo (+)	=	5 ghati 52 pal
	=	9 ghati 49 pal

This is more than Isht kaal of 7 ghati 30 pal (calculated above). As Isht kaal is less than ending period of Leo, hence sayana Leo sign was rising at the time of birth. For calculation of longitude of ascendant observe the following steps.

Ending time of Leo	=	9 ghati 49 pal
Isht kaal (deduct)	=	7 ghati 30 pal
Remaining period of Leo 2 ghati 19 pal	=	139 pal
352 pal of Leo gives	=	30°
139 pal of Leo will give	=	$\frac{30 \times 139}{352}$ = 11°51'

This is the longitude of Leo which is remaining after time of birth. To calculate the lagna we must deduct it from the end of Leo i.e. 6^s to get the sayana longitude of lagna.

Sayana longitude of lagna 30° minus 11°51'	=	$4^s18°09'$
Less ayanamsha	=	23°45'
Nirayana lagna	=	$3^s24°24'$

Calculation of planetary longitudes

Here we give the method of calculation of longitude of Moon. Refer to page numbers 50 and 51 of Vishwavijay panchang 1992.

Moon enters Cancer on 1-7-92 at		17:43
Moon enters Gemini on 29-6-92 at		16:52
Moon transits Gemini's 30° in		48^h51^m
Time elapsed from Moon's entry into sign upto time of birth		
on 29-6-92	24:00–16:52 =	7:08
on 30-6-92	=	24:00
on 1-7-92	=	8:30
Total		$39^h38'$
In 48^h51^m Moon's movement in Gemini	=	30°
In 39^h38^m Moon's movement in Gemini	=	$\frac{30 \times 39^h38^m}{48^h51^m}$
	=	24°20'23"
Hence longitude of Moon	=	$2^s24°20'23"$

Calculation of longitudes of other planets is also done in the same way. Since Moon is fast moving we consider its transit in a sign. However for slower moving planets their transit in a nakshatra or nakshatra pada is considered. These details are available in panchang.

Calculation of Vimshottari Dasha Balance

Moon's nakshatra determines the balance of dasha. *Bhukt* part is that part of the nakshatra which has elapsed whereas *Bhogya* part is that which is yet to come and available to native as dasha balance at birth.

On 1st July 1992 Punarvasu nakshatra upto 43 ghati 57 pal.
On 30th June 1992 Ardra nakshatra upto 50 ghati 15 pal.

Note to see the two figures so that the birth time falls in between the two.

Extent of Punarvasu nakshatra :

On 30-6-92, 60^{gh} (-) $50^{gh}15^{pal}$	=	9 ghati 45 pal
On 1-7-92	=	43 ghati 57 pal

Total extent of Punarvasu nakshatra	=	53 ghati 42 pal
Punarvasu nakshatra covered upto birth		
On 30-6-92	=	9 ghati 45 pal
On 1-7-92	=	7 ghati 30 pal
Total	=	17 ghati 15 pal
Total extent of running nakshatra	=	53 ghati 42 pal
Nakshatra covered upto birth (-)	=	17 ghati 15 pal
Nakshatra balance at birth	=	36 ghati 27 pal

Lord of Punarvasu nakshatra is Jupiter having Vimshottari dasha of 16 years. Balance of dasha at birth will be :

53 ghati 42 pal has = 16 years

$$\text{36 ghati 27 pal has} = \frac{16 \times 36^{gh}27^{pal}}{53^{gh}42^{pal}}$$

$$\text{or} \quad \frac{16 \times 36.45}{53.7} = 10.860335 \text{ years}$$

or Balance of Jupiter 10 years, 10 months, 8 days.

Note: There may be slight variations in these calculations if compared with modern method due to reasons explained above.

The method of casting of horoscope explained above is only indicative. For a full and exhaustive treatment of the subject, Dr. B.V. Raman's *A Manual of Hindu Astrology* may be referred to. However it will not be out of place to state that casting of horoscope by traditional method has lost its importance in view of accurate ephemerides available for casting of horoscope by modern method.

CHAPTER XI

BHAVAS

"For the weak as well as for the strong, forgiveness is an ornament. What can a wicked man do to him who has the sword of peace in his hand?"

–Mahabharata, V.33. 54.

The zodiac is an imaginary 360° round and 16° wide band in the heavens. It stretches about 8° north and 8° south of ecliptic which in turn passes through the centre of zodiac. The zodiac is divided into 12 compartments of 30° each and they are known as signs or rashis. The sign which rises in eastern horizon at the time of birth is ascendant which falls in first house of the horoscope. A horoscope is a chart of heavens at the time of birth and has 12 houses. Thus each house theoretically has an extent of 30°. Since there are controversies in this regard, it needs to be understood in a greater detail.

The Ascendant and the 10th Cusp

The ascendant is the point of intersection of ecliptic and the eastern horizon at any given point of time. It is the first house of horoscope. On the other hand the point of intersection of ecliptic with meridian of the place at any given time is the mid heaven or meridian cusp. It is also known as Medium Coeli or MC. Right ascension of MC is sidereal time of the moment called RAMC.

The meridian cusp or 10th cusp coincides with 10th house of the horoscope. Its longitude is measured along the ecliptic from first point of Aries. In easier terms an observer's meridian is the plumb line on the celestial sphere directly above the observer. Where this observer's meridian intersects the ecliptic

is known as 10th cusp. This is the 10th house and an important calculation to understand the horoscope in detail. Astrologically also 10th house has its importance as it signifies the profession, fame, karma, prosperity through karma, honour and righteous path. It is the karma or one's actions which links the human existence from one birth to another.

Birth chart and Bhava chart

A birth chart is the chart of heavens with 12 signs and 12 houses of 30° each. It is therefore a chart with equal divisions of houses and each house has a fixed extent of 30° of the ecliptic. A bhava chart on the other hand is a chart of unequal divisions of each house.

There is a controversy with regard to fixed bhavas and variable bhavas. Majority of astrologers feel that each bhava or house is having a fixed extent of 30°, having an influence of 15° on either side of ascendant lagna or any bhava. This is called the equal house system and has wide acceptability. The other viewpoint however favours the unequal houses of ecliptic which are based on the relationship between ecliptic and equator. The variations in unequal house divisions is due to the latitude of place of birth.

Starting points or middle points

There is another controversy with regard to the beginning, middle or end of a bhava. Calculation of ascendant gives us longitude of rising sign in the eastern horizon. Similarly we calculate the 10th house from sidereal time of birth. The controversy arises whether these points are beginning or middle of the bhava concerned. As per Hindu astrological belief these are the middle points of bhavas. The ascendant is lagna madhya and extends 15° on either side of ascendant's longitude. There are however certain astrologers including the western astrologers who favour that these points are the beginning of bhavas concerned. According to them the ascendant degree is beginning of first house and MC beginning of 10th house. As per this system the longitudes of houses are bhava sandhis or cusps.

The general acceptable view as per Hindu astrology is in favour of taking bhava longitudes as bhava madhyas. It is more

rational than the other view point because bhava madhyas are central points of a particular house. Any planet exerts greatest influence at bhava madhya than at bhava sandhis where it is said to be weak. Not going further into these controversies, we give below the method of casting bhava chart of unequal house division.

Calculation of Meridian Cusp

As the meridian of an observer is his zenith or plumb line joining it to ecliptic over his head, the meridian for all places is calculated on the basis of Table of Tenth House (for all places on the earth). The method is basically the same. The ascendant is calculated from sidereal time of birth using the table of ascendants for latitude of the place. Whereas 10th house is calculated from sidereal time of birth using table of 10th house given in the *Table of Ascendants.*

Table of Houses

Like the table of 10th house, the longitude of other houses can be directly obtained from the table of houses constructed for different latitudes. Different systems followed in this regard are summarised here in brief.

1. ***Ptolemaic System or the Equal House System*** : As the name suggests, all houses in this system are of equal length having an extent of 30° each. Hence in this system only the longitude of ascendant needs to be calculated and the longitudes of successive houses are at a distance of 30° each.

2. ***Porphyry's or Present Hindu System*** : This is the present Hindu system in which the longitude of Lagna and the 10th house is obtained from the table of ascendants. The difference between the two is divided by 6 to give the distance between each bhava madhya and bhava sandhi. When this 1/6th part is added to 10th cusp, successively we get the bhava sandhi and bhava madhya for houses 10, 11, 12 and upto Lagna longitude. This method is explained in the worked out example which follows. This is a system based on unequal division of houses and its acceptability seems to be on the decline.

3. ***Placidus's or Semi Arc System*** : The method of calculation of table of houses based on this system requires some

trigonometric equations. However for the sake of simplicity it can be stated that the semi-arc from asendant to descendant covering 1st house to 7th house with 10th house or MC at the upper meridian is called a semi-diurnal arc of the movement of a planet. Similarly from descendant to Lagna crossing the lower meridian is the semi-nocturnal arc. The time taken to cover a semi-arc when divided by 6 gives the time taken by a planet to cover a house. This calculatioln for construction of table of houses based on this method would therefore require the meridian passages of planets, their latitude, declination and right ascension.

Although technically these three methods are in vogue and table of houses can be constructed based on any of them, yet practically the present Hindu system is being used. However, astrologers are inclined to increasingly use the fixed house system as explained above.

Example

The example No : 1 given in Chapter VIII is taken here for calculation of bhavas and chalit chart.

Solution :	Sidereal time of birth	$10^h20^m35^s$
	Ascendant for Delhi	$7^s2°36'$
	10th cusp (from table of 10th house)	$4^s10°12'$
	Ayanamsha correction for 1994	(-) $0°47'$
	Nirayana longitude of 10th cusp	$4^s09°25'$

The position of any six consecutive houses is diagrammatically similar in their position in remaining six houses which is 180° away. Whenever we add six signs to the longitude of any house, it gives longitude of house seventh from it. We can do this in the above example :

Longitude of ascendant	$7^s2°36'$
Add six signs	(+) 6^s
Longitude of 7th house	$1^s2°36'$
Similarly longitude of MC	$4^s9°25'$
Add six signs	(+) 6^s
Longitude of 4th house	$10^s9°25'$

The mid point of a sign is known as its bhava madhya. The ending point of a bhava which is also beginning point of the next bhava is called bhava sandhi. In unequal house system further calculation is required. However we are taking a viewpoint here which is followed by majority of astrologers in this regard. The ascendant or 10th house longitude is being taken as bhava madhyas. The calculation is as follows :

	s ° ' "
Longitude of ascendant	7 2 36
Longitude of 10th house	4 9 25
Difference between the two	2 23 11
Divide this by 6, we get as 1/6th part	13 5150
Longitude of 10th cusp	4 09 2500
Add 1/6th	13 5150
10th/11th bhava sandhi	4 23 1650
Add 1/6th	13 5150
11th bhava madhya	5 07 0840
Add 1/6th	13 5150
11th/12th bhava sandhi	5 21 0030
Add 1/6th	13 5150
12th bhava madhya	6 04 5220
Add 1/6th	13 5150
12/1st bhava sandhi	6 18 4410
Add 1/6th	13 5150
Longitude of ascendant	7 02 3600

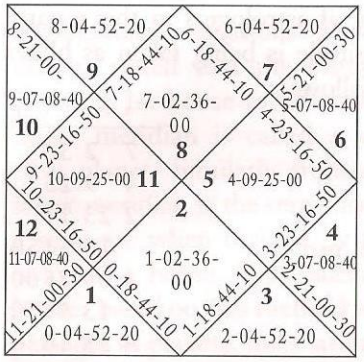
Similarly we can calculate the difference between 7th bhava madhya (calculated on the previous page) and 10th bhava madhya. Dividing it by six as explained above we can find the bhava madhyas and bhava sandhis of 7th to 10th houses.

	s ° ' "
Longitude of 7th house	1 2 36
Longitude of 10th house	4 9 25
Difference between the two	3 6 49
Divide this by 6, we get as 1/6th part	16 0810

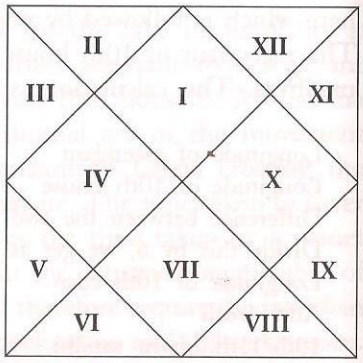
By adding this 1/6 part successively to 7th house madhya, we get the bhava sandhi and bhava madhyas from 7th house to 10th house. Adding 6 signs to all these will give us bhava madhyas and bhava sandhis from lagna to 7th house. Thus we can complete the chart with all bhava sandhis and bhava madhyas as shown in the chart given on the next page.

Bhava chart and Chalit chart

The bhava madhyas obtained from above calculation indicates whether any bhava madhya has shifted to another house. A bhava

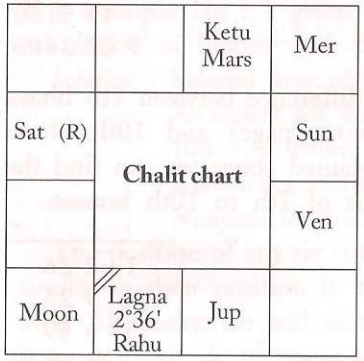


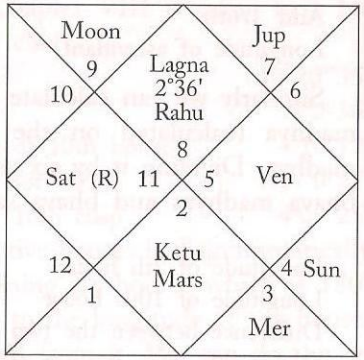
Bhava madhya & bhava sandhi



Bhava Chart

chart is cast, as shown, indicating bhava madhyas falling in different houses. Incidentally in this case no bhava has shifted and hence in comparison to the birth chart placement of bhavas remain the same. But it may so happen that bhava madhyas of any two houses fall in one house.





In the bhava chart when we place the planets according to degrees of planets vis-a-vis the bhava sandhis, we get what is known as a chalit chart. In our example Rahu and Ketu have shifted from 12th and 6th houses to 1st and 7th houses respectively whereas position of other planets have remained the same.

Predictive use of chalit chart is also a matter of individual opinion amongst astrologer community. However it is rightly felt that if elaborate use of divisional charts is made then utility of chalit may recede to the background.

CHAPTER XII

DIVISIONAL CHARTS

"Man is the dispenser of his own destiny. The actions done in a former life are seen to produce fruits in this. The soul is born again with its accumulated load of karma. By performing only virtuous actions it attains to the state of the celestials. By a combination of good and bad actions, it acquires the state of human beings. By indulgence in sensuality and similar vices, it is born among the lower animals."

- Mahabharata, III. 208.22.30.

The secrets of predictive astrology are hidden in the divisional charts (known as vargas). Any attempt to see a horoscope ignoring the divisional charts may lead to grave mistakes in its interpretation and analysis. At the same time it is difficult to clearly establish the method of analysis of vargas because of which many astrologers either ignore them completely or glance through them half heartedly. It is precisely due to this that predicting through divisional charts remains one of the greatest areas of research today.

The divisional charts are basically used to establish the strengths and weaknesses of a planet. A planet is strong if posited in own or exaltation signs in vargas. Further, in various vargas the planet may be posited in friendly, inimical or neutral signs etc. which together with other predictive techniques of analysing divisional charts reveal a wealth of information.

The strength of a planet must be understood with the backdrop of planetary friendship and enmity which is broadly of two types. The permanent friendship and the temporary friendship. The permanent or 'naisargika' friendship is calculated from the mooltrikona sign of a planet. The lords of 2, 4, 5, 8, 9, 12 houses from the mooltrikona sign of a planet are its

friends and others its enemies. If one lordship signifies friendship and the other enmity then such a planet is termed as neutral.

The temporary or 'tatkalika' friendship is calculated from the interplanetary position. Planets posited in 2, 3, 4, 10, 11, 12 houses from the planet are its temporary friends and others its enemies.

Each divisional chart signifies a particular signification or event of human life for which the chart must be studied. These significations, the method of calculation and broad principles of interpretation followed by the readymade tables and an example are given in the following pages.

Basic Chart (D-1)

The basic birth chart of a native which is also called the Rashi chart is the 1st divisional chart termed as D-1. This chart is seen to ascertain everything about the body, constitution and health of the native. This is the foremost chart for predicting future and is complete in itself. All other divisional charts only supplement and can never supplant the birth chart. The detailed method of its casting has been dealt already in a previous chapter.

Hora (D-2)

This chart is studied for wealth and prosperity of the native. Each sign of 30° is divided into two parts called horas of 15° each. The Sun and the Moon are allotted the lordship of these two divisions or horas. In odd signs the Sun rules the 1st half and Moon rules the 2nd half.

In even signs Moon rules the 1st half and the Sun rules the 2nd half. In other words, planets/lagna posited in the odd signs in the 1st hora i.e. 0°-15° are allotted to Leo and those in the 2nd hora i.e. 15°-30° are allotted to Cancer. Similarly planets/lagna in even signs in 1st hora i.e. 0°-15° are allotted to Cancer and those in 2nd hora i.e. 15°-30° are allotted to Leo. Assume that Venus is posited in Libra at 14°13'. It is in an odd sign in the first hora ruled by Sun and hence Venus will be placed in Leo in the hora chart.

Maharishi Parashar in his Brihat Parashar Hora Shastra reveals some techniques of analysing the hora chart. It says that Jupiter,

Sun and Mars are good in Sun's hora whereas Moon, Venus and Saturn are good in Moon's hora. Mercury is effective in both the horas. In an odd sign Sun's hora is powerful whereas in an even sign Moon's hora is powerful.

There is another viewpoint too. Benefic planets are considered good in even signs and in the hora of Moon. Whereas malefics give good results in odd signs and in the hora of Sun. The effects of a hora are strongest when a planet is placed in the first one third part of the hora, medium in the second and nil in the third one third part of the hora.

Dreshkon (D-3)

This chart is seen for brothers and sisters (co-borns) of the native and everything concerning co-borns. It is also seen for happiness or otherwise which native may derive through co-borns and family ties. It indicates the birth (and death) of brothers and sisters. This chart also indicates the nature of death of the native depending upon the nature of 22nd dreshkon.

Each sign of 30° is divided into three parts of 10° each. There are three methods of calculating dreshkon chart but the method which is most commonly used is being given here. Planets/lagna posited in 1st dreshkon falls in the sign itself. The 2nd dreshkon falls in 5th from the sign and the 3rd dreshkon falls in 9th from the sign under consideration where the planet is posited.

Assume Saturn is posited in Leo at 13° 45'. Hence it is posited in the 2nd dreshkon which will fall in 5th from the sign where the planet is posited. 5th from Leo is Saggitarius and Saturn in the dreshkon chart will be placed in Saggitarius.

In moveable signs planets posited in 1st dreshkon, in fixed signs planets posited in 2nd dreshkon and in common signs planets posited in 3rd dreshkon give good results. In analysing this chart one must see the strength and position of 3rd lord of D-3 and Mars the karaka for 3rd house, together with 3rd from Mars.

Chaturthamsha (D-4)

This divisional chart is also known as *Turyamsa* or *Padamsa*. It is seen for fate, destiny or bhagya which is the real prosperity.

This chart therefore combines the role of fate in achieving financial stability, moveable and immovable assets and liabilities.

Each sign of 30° is divided into 4 parts of 7°30' each. Planets/ Lagna posited in the first division or Chaturthamsha falls in that sign itself. Planets posited in the 2nd division fall in 4th from the sign. Planets posited in the 3rd division fall in 7th from the sign and planets posited in the 4th division fall in 10th house from the sign where the planet is posited. Assume Ketu is posited in Pisces at 14°13'. Hence it is in the 2nd division. In the Chaturthamsha chart it will fall in 4th from the sign where Ketu is posited in the birth chart i.e. Pisces. Hence Ketu will be placed in Gemini in the chart.

4th house inter alia signifies property and conveyances the karaka being Mars and Venus respectively. In analysing this chart see the Lagna, Lagna lord, 4th house, 4th lord and karakas Mars and Venus together with 4th from Mars and Venus respectively. The possibility of possessing immovable property, vehicles and also the happiness, troubles or litigations connected with these significations can be seen from this divisional chart.

Broadly this is the method of analysing the vargas taking into account the respective karakas of the house in question. This method may be employed in studying remaining divisional charts as well.

Panchamsha (D-5)

This divisional chart reveals the spiritual inclinations of the native. Any amount of happiness and prosperity is not complete without the leanings towards philosophy, religion and compassion. This chart therefore, indicates the *purvapunyas* or accumulated virtues of the past life capable of giving appropriate results in the present life. This chart can also reveal suitable Deity for propitiation and worship.

Each sign of 30° is divided into 5 divisions of 6° each. In moveable signs the counting starts from the sign itself, in fixed signs count from 5th and in common signs count from 9th house from where the planet/lagna is posited. This is the commonly used method of casting Panchamsha chart. Assume Mars posited in Virgo at 23°02' in the 4th division. In Panchamsha chart

it will be placed in the 4th house from Taurus (9th from the sign where planet is posited) i.e. Leo.

There are certain controversies in this regard also. Another method of casting Panchamsha is that in odd signs the planets Mars, Saturn, Jupiter, Mercury and Venus respectively rule the 5 divisions of 6° each. In even signs the order is reversed. This is similar to the Trimshamsha calculation with different degree divisions. However in the tables we have used the first method given above which is more prevalent with the astrologer community.

Shashtamsha (D-6)

Also known as *Shrashtamsha* to differentiate it from the D-60 chart called Shastiamsha. This divisional chart is related to the 6th house of the birth horoscope and indicates health, proneness to disease, debts, disputes etc. In astrological counselling fear of disease is to be removed from the mind of a consultor. This chart may also be used to suggest remedial or propitiation measures for which further researches are required.

Each sign of 30° is divided into 6 divisions of 5° each. In odd signs the counting starts from Aries and in the even signs the counting starts from Libra.

Saptamsha (D-7)

This chart is seen for children and grandchildren, their possibility, well-being etc. Each sign of 30° is divided into 7 parts of 4°17'8.57" each. In odd signs counting starts from the sign itself whereas in even signs counting starts from 7th from the sign where planet or lagna falls. Assume Sun posited in Scorpio sign in the birth chart at 23°58' in the 6th division. As it is placed in an even sign the counting shall start from 7th from the sign i.e. from Taurus and 6th division will fall in Libra. Hence Sun will be placed in Libra in Saptamsha chart.

It is a very interesting divisional chart which reveals a wealth of information with regard to progeny. However it is also held by some astrologers that in female charts it signifies the husband's well being and prosperity. It is also believed that with regard to progeny better results are obtained from female charts than from male charts.

Ashtamsha (D-8)

This divisional chart is seen for longevity or the anticipated life span of the native. Each sign of 30° is divided into 8 equal divisions of 3°45' each. In moveable signs counting starts from Aries, in fixed signs from Saggitarius and in dual signs from Leo. Assume Mercury posited in Taurus at 28°24' in the 8th division of the sign. This being a fixed sign counting shall start from Saggitarius and Mercury will be placed in Cancer.

Navamsha (D-9)

It is the most important divisional chart and is rightly considered to be the supplementary birth chart. Normally predictions are not ventured without Navamsha chart. It reveals inter alia the strength or weakness of the planet and the periods of stresses or strains in life. This chart is basically seen for married life, partner, temperament, disposition, character of the spouse, happiness and miseries in married life etc.

In this chart each sign of 30° is divided into 9 parts of 3°20' each. One of the peculiarities of Hindu astrology is the use of nakshatras or constellations. There are 27 nakshatras each having 4 parts or padas. Thus there are 27 multiplied by 4 = 108 nakshatra padas. Dividing the 360° by 108 we get each nakshatra pada to have a longitude of 3°20' each which coincides with each navamsha division of 3°20'. This explains the importance of the Navamsha and its justified use as a supplementary birth chart. There are various methods of constructing a Navamsha chart and considering its importance all the methods are being explained.

Method No 1: For a planet/Lagna posited in a fiery sign counting starts from Aries, in earthy sign counting starts from Capricorn, in airy sign counting starts from Libra and in watery sign counting starts from Cancer. Assume Lagna in Cancer, a watery sign at 17°43' in the 6th division. As the counting has to start from Cancer in watery sign, Lagna will fall in Saggitarius in the Navamsha chart.

Method No 2: For a planet/Lagna posited in a moveable sign counting starts from the sign itself, in fixed sign counting starts from 9th and in dual sign counting starts from 5th from where the planet is posited. Assume Rahu in Aquarius at 24°2' in 8th division. Since Aquarius is a fixed sign, counting will start from

9th from it i.e. from Libra. The 8th from Libra will be Taurus and Rahu will be placed in Taurus in the Navamsha chart.

Method No 3 : This is a mathematical method of calculating the navamsha chart. Multiply completed signs by 9 and add running Navamsha division to it. Divide the resultant figure by twelve. The remainder gives the sign where planet will be posited in the Navamsha chart. Assume Moon in Cancer in the birth chart at 22°12' in the 7th Navamsha division. The completed signs are three and Moon is in the 4th sign. Multiply 3 by 9 giving 27. Add 7 (the running Navamsha division) to it giving 34. Divide this by 12 giving 10 as the remainder. Moon will be placed in Capricorn (the 10th sign of the zodiac) in Navamsha.

Planets in the first Navamsha division in moveable signs, 5th division in fixed signs and 9th division in dual signs are Vargottama, which means occupying the same sign in the birth chart as well as Navamsha chart.

Dashamsha (D-10)

This chart is very important in judging the professional achievements, career, trends of destiny, honour and success in life. Results of one's personal efforts in the form of promotions or demotions in profession or career, periods of professional stress, change of job etc. are all seen from this chart. In the present age of cut throat competition this chart assumes greater significance in counselling through predictions. It indicates those areas where good fortune resides and where energies may be channelised for optimum results. D-10 chart also indicates the income earned due to native's own efforts.

Each sign of 30° is divided into 10 divisions of 3° each. In odd signs counting starts from the sign itself where the planet/ lagna is posited. In even signs however, counting starts from 9th house from the sign under consideration, where planet is posited in the birth chart. Assume Jupiter in Pisces at 5°45' in 2nd division. As it is posited in even sign the counting will commence from 9th from Pisces i.e. Scorpio. As Jupiter is in the 2nd division, 2nd from Scorpio will be Saggitarius and therefore Jupiter will be placed in Saggitarius in the Dashamsha chart.

Ekadashamsha (D-11)

This divisional chart is also known as *Rudramsha* or *Labhamsha*. In contrast to the D-10 chart which shows earned income of the native, D-11 chart indicates the unearned wealth for which no effort is required. This chart therefore is very important in judging the financial stability of a person mainly through inheritance, legacies, speculation, gambling etc.

Each sign of 30° is divided into 11 equal parts of 2°43'38.1" each. In all the signs counting starts from Aries and proceed in the reverse order with the result that Taurus gets eliminated. Assume Lagna of the birth chart in Gemini at 26°41' falling in 10th division. Counting from Aries in the reverse order, the Ekadashamsha lagna will fall in Cancer.

Dwadashamsha (D-12)

This divisional chart is seen for matters relating to parents. To differentiate between mother and father, respective karakas may be considered in the chart. This chart is also said to be useful in dealing with higher consciousness and provides a link between the past and future lives.

Each sign of 30° is divided into 12 parts of 2°30' each. The counting is cyclic and starts from the sign itself where planet or lagna is posited. A planet posited in Aries at 12°34' in the 6th Dwadashamsha division will fall in Virgo as counting starts from the sign itself, in this case from Aries. The 6th from Aries is Virgo and the planet will be placed in Virgo in Dwadashamsha chart.

Shodashamsha (D-16)

This chart is also known as *Kalamsha*. It deals with conveyances and general happiness. Some astrologers suggest that it indicates sisters also but there seems to be no references in this regard. This chart can also be used in seeing matters relating to vehicles and also death due to vehicular accidents.

Each sign of 30° is divided into 16 parts of 1°52'30" each. As per Maharishi Parashar in his Brihat Parashar Hora Shastra, in moveable signs counting starts from Aries, in fixed sign from Leo and in dual sign from Saggitarius. However there is another school which advocates that in odd signs counting starts from

the sign itself whereas in even signs counting starts from the 4th therefrom but in a reverse order. Counting moves in this order even after completion of first cycle of the zodiac. This rule is akin to the one given by Mantreswara with slight modifications. Both these methods seem to give results because in both the methods placement of planets is similar to a large extent in Shodashamsha chart. Further research is however required to ascertain the usefulness of one method over the other. In ready made divisional charts, the rule laid down by Maharishi Parashara has been used.

Vimshamsha (D-20)

This chart is seen for worship or *Oupasana* and for the blessings the native may derive from this worship. This chart also reveals about meditation, spiritual inclinations and religious activities. Each sign of 30° is divided into 20 parts of 1°30' each. For a planet posited in a moveable sign counting starts from Aries, in fixed sign from Saggitarius and in dual sign from Leo. Assume Jupiter posited in Libra at 11°56' in the 8th division. Libra being a moveable sign counting will start from Aries, and Jupiter will be placed in Scorpio in the Vimshamsha chart.

Chaturvimshamsha (D-24)

This divisional chart is also known as *Siddhamsha* and is seen for education, learning and academic achievements etc. Each sign of 30° is divided into 24 parts of 1°15' each. In odd signs counting starts from Leo and in even signs counting starts from Cancer and move in the same order even after completing the first cycle of zodiac. Assume Rahu posited in Taurus at 3°43' in the 3rd division. In even sign counting starts from Cancer. 3rd from cancer is Virgo and Rahu will be placed there in the Chaturvimshamsha chart.

Saptvimshamsha (D-27)

This chart is also known as *Bhamsha* or *Nakshatramsha* and is seen for one's general strengths and weaknesses. Even physical strength, stamina and endurance of the body is seen from this chart. Each sign of 30° is divided into 27 parts of 1°6'40" each. For planets posited in fiery signs counting starts from Aries, for

earthy signs from Cancer, for airy signs from Libra and for watery signs from Capricorn. The counting is cyclic and continuous.

Trimshamsha (D-30)

This chart is seen for miseries and happiness. Also for evils called arishta which means general inauspiciousness. It is also said to be seen for the character of the native. Each sign of 30° is divided into 30 parts of 1° each. In odd signs Mars, Saturn, Jupiter, Mercury and Venus rule 5, 5, 8, 7, and 5 degrees successively. In even signs reverse of the above holds good. A planet posited in odd sign in the birth chart will continue to be placed in odd sign of the Trimshamsha ruled by the planet. Similarly planet in even sign will continue to remain in even sign as above. Assume Mercury in Libra at 7°31'. This falls in the Trimshamsha division ruled by Saturn and thus will be placed in D-30 in odd sign of Saturn which is Aquarius.

Khavedamsha (D-40)

This chart is also known as *Chatvarimshamsha* and is seen for studying the auspicious and inauspicious effects of horoscope on the native. Each sign of 30° is divided into 40 parts of 0°45' each. For odd signs counting starts from Aries and for even signs from Libra. Assume the Moon in Scorpio at 3°23' in the 5th division. As counting starts from Libra in even signs, 5th from Libra will fall in Aquarius and the moon will be placed in Aquarius in Khavedamsha chart.

Akshvedamsha (D-45)

This chart is seen for character and conduct of the native and also for general auspicious and inauspicious effects. Each sign of 30° is divided into 45 parts of 0°40' each. Counting starts from Aries in moveable signs, from Leo in fixed signs and from Saggitarius in dual signs. Assume Ketu in Libra at 11°54' in the 18th division. Ketu will therefore will be placed in Virgo in the Akshavedamsha chart.

Shashtiamsha (D-60)

This chart is again seen for general auspicious and inauspicious indications. Each sign of 30° is divided into 60 parts of 0°30'

each. Ignore the sign position of a planet. Multiply the degrees by two. Ignore the minutes and divide the completed degrees by 12. Add one to the remainder. The resultant figure may be counted from the sign where planet is posited.

Let us take an example. Assume Jupiter in Gemini at 13°23'. Multiply by two and we get 26°46'. Ignore the minutes and divide the degrees by 12. When we divide 26 by 12, we get 2 as remainder. Add one to this and we get three. Counting three from Gemini the sign position of the planet Jupiter, we get Leo. Jupiter will be placed in Leo in the Shastiamsha chart.

Maharishi Parashar has given the names of Shastiamshas which have to be read in the direct order in case of odd signs and in reverse order in case of even signs. Planets in benefic Shastiamshas produce benefic results and reverse is true in case of malefic Shastiamshas.

DIVISIONAL CLASSIFICATION

The divisional charts have been categorised as follows :

1. Shadvargas : D-1, D-2, D-3, D-9, D-12 & D-30.
2. Saptavargas : D-1, D-2, D-3, D-7, D-9, D-12 & D-30.
3. Dashvargas : D-1, D-2, D-3, D-7, D-9, D-10, D-12, D-16, D-30 & D-60.
4. Shodasvargas : D-1, D-2, D-3, D-4, D-7, D-9, D-10, D-12, D-16, D-20, D-24, D-27, D-30, D-40, D-45 & D-60.

These 16 vargas have been enumerated by Parashara. The remaining four vargas namely Panchamsha (D-5), Shashtamsha (D-6), Ashtamsha (D-8) and Ekadashamsha (D-11) have also been given here enumerating their importance and method of casting.

TABLES OF DIVISIONAL CHARTS

Hora (D-2)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
15 - 00	5	4	5	4	5	4	5	4	5	4	5	4
30 - 00	4	5	4	5	4	5	4	5	4	5	4	5

Dreshkon (D-3)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
10 - 00	1	2	3	4	5	6	7	8	9	10	11	12
20 - 00	5	6	7	8	9	10	11	12	1	2	3	4
30 - 00	9	10	11	12	1	2	3	4	5	6	7	8

Chaturthamsha (D-4)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
7- 30	1	2	3	4	5	6	7	8	9	10	11	12
15 - 00	4	5	6	7	8	9	10	11	12	1	2	3
22 - 30	7	8	9	10	11	12	1	2	3	4	5	6
30 - 00	10	11	12	1	2	3	4	5	6	7	8	9

Panchamsha (D-5)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
6 - 00	1	6	11	4	9	2	7	12	5	10	3	8
12 - 00	2	7	12	5	10	3	8	1	6	11	4	9
18 - 00	3	8	1	6	11	4	9	2	7	12	5	10
24 - 00	4	9	2	7	12	5	10	3	8	1	6	11
30 - 00	5	10	3	8	1	6	11	4	9	2	7	12

Shashtamsha (D-6)

Degrees upto	*Odd signs*	*Even signs*
5-00	1	7
10-00	2	8
15-00	3	9
20-00	4	10
25-00	5	11
30-00	6	12

Saptamsha (D-7)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
4 - 17	1	8	3	10	5	12	7	2	9	4	11	6
8 - 34	2	9	4	11	6	1	8	3	10	5	12	7
12 - 51	3	10	5	12	7	2	9	4	11	6	1	8
17 - 08	4	11	6	1	8	3	10	5	12	7	2	9
21 - 25	5	12	7	2	9	4	11	6	1	8	3	10
25 - 42	6	1	8	3	10	5	12	7	2	9	4	11
30 - 00	7	2	9	4	11	6	1	8	3	10	5	12

Ashtamsha (D-8)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
3 - 45	1	9	5	1	9	5	1	9	5	1	9	5
7 - 30	2	10	6	2	10	6	2	10	6	2	10	6
11 - 15	3	11	7	3	11	7	3	11	7	3	11	7
15 - 00	4	12	8	4	12	8	4	12	8	4	12	8
18 - 45	5	1	9	5	1	9	5	1	9	5	1	9
22 - 30	6	2	10	6	2	10	6	2	10	6	2	10
26 - 15	7	3	11	7	3	11	7	3	11	7	3	11
30 - 00	8	4	12	8	4	12	8	4	12	8	4	12

Navamsha (D-9)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
3 - 20	1	10	7	4	1	10	7	4	1	10	7	4
6 - 40	2	11	8	5	2	11	8	5	2	11	8	5
10 - 00	3	12	9	6	3	12	9	6	3	12	9	6
13 - 20	4	1	10	7	4	1	10	7	4	1	10	7
16 - 40	5	2	11	8	5	2	11	8	5	2	11	8
20 - 00	6	3	12	9	6	3	12	9	6	3	12	9
23 - 20	7	4	1	10	7	4	1	10	7	4	1	10
26 - 40	8	5	2	11	8	5	2	11	8	5	2	11
30 - 00	9	6	3	12	9	6	3	12	9	6	3	12

Dashamsha (D-10)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
3 - 00	1	10	3	12	5	2	7	4	9	6	11	8
6 - 00	2	11	4	1	6	3	8	5	10	7	12	9
9 - 00	3	12	5	2	7	4	9	6	11	8	1	10
12 - 00	4	1	6	3	8	5	10	7	12	9	2	11
15 - 00	5	2	7	4	9	6	11	8	1	10	3	12
18 - 00	6	3	8	5	10	7	12	9	2	11	4	1
21 - 00	7	4	9	6	11	8	1	10	3	12	5	2
24 - 00	8	5	10	7	12	9	2	11	4	1	6	3
27 - 00	9	6	11	8	1	10	3	12	5	2	7	4
30 - 00	10	7	12	9	2	11	4	1	6	3	8	5

Ekadashamsha (D-11)

Degrees	**2-43**	**5-27**	**8-10**	**10-54**	**13-38**	**16-21**
Sign	1	12	11	10	9	8
Degrees	**19-5**	**21-49**	**24-32**	**27-16**	**30-0**	
Sign	7	6	5	4	3	

Dwadashamsha (D-12)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
2 - 30	1	2	3	4	5	6	7	8	9	10	11	12
5 - 00	2	3	4	5	6	7	8	9	10	11	12	1
7 - 30	3	4	5	6	7	8	9	10	11	12	1	2
10 - 00	4	5	6	7	8	9	10	11	12	1	2	3
12 - 30	5	6	7	8	9	10	11	12	1	2	3	4
15 - 00	6	7	8	9	10	11	12	1	2	3	4	5
17 - 30	7	8	9	10	11	12	1	2	3	4	5	6
20 - 00	8	9	10	11	12	1	2	3	4	5	6	7
22 - 30	9	10	11	12	1	2	3	4	5	6	7	8
25 - 00	10	11	12	1	2	3	4	5	6	7	8	9
27 - 30	11	12	1	2	3	4	5	6	7	8	9	10
30 - 00	12	1	2	3	4	5	6	7	8	9	10	11

Shodashamsha (D-16)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
1 - 52	1	5	9	1	5	9	1	5	9	1	5	9
3 - 45	2	6	10	2	6	10	2	6	10	2	6	10
5 - 37	3	7	11	3	7	11	3	7	11	3	7	11
7 - 30	4	8	12	4	8	12	4	8	12	4	8	12
9 - 22	5	9	1	5	9	1	5	9	1	5	9	1
11 - 15	6	10	2	6	10	2	6	10	2	6	10	2
13 - 07	7	11	3	7	11	3	7	11	3	7	11	3
15 - 00	8	12	4	8	12	4	8	12	4	8	12	4
16 - 52	9	1	5	9	1	5	9	1	5	9	1	5
18 - 45	10	2	6	10	2	6	10	2	6	10	2	6
20 - 37	11	3	7	11	3	7	11	3	7	11	3	7
22 - 30	12	4	8	12	4	8	12	4	8	12	4	8
24 - 22	1	5	9	1	5	9	1	5	9	1	5	9
26 - 15	2	6	10	2	6	10	2	6	10	2	6	10
28 - 07	3	7	11	3	7	11	3	7	11	3	7	11
30 - 00	4	8	12	4	8	12	4	8	12	4	8	12

Vimshamsha (D-20)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
1 - 30	1	9	5	1	9	5	1	9	5	1	9	5
3 - 00	2	10	6	2	10	6	2	10	6	2	10	6
4 - 30	3	11	7	3	11	7	3	11	7	3	11	7
6 - 00	4	12	8	4	12	8	4	12	8	4	12	8
7 - 30	5	1	9	5	1	9	5	1	9	5	1	9
9 - 00	6	2	10	6	2	10	6	2	10	6	2	10
10 - 30	7	3	11	7	3	11	7	3	11	7	3	11
12 - 00	8	4	12	8	4	12	8	4	12	8	4	12
13 - 30	9	5	1	9	5	1	9	5	1	9	5	1
15 - 00	10	6	2	10	6	2	10	6	2	10	6	2
16 - 30	11	7	3	11	7	3	11	7	3	11	7	3
18 - 00	12	8	4	12	8	4	12	8	4	12	8	4
19 - 30	1	9	5	1	9	5	1	9	5	1	9	5
21 - 00	2	10	6	2	10	6	2	10	6	2	10	6
22 - 30	3	11	7	3	11	7	3	11	7	3	11	7
24 - 00	4	12	8	4	12	8	4	12	8	4	12	8
25 - 30	5	1	9	5	1	9	5	1	9	5	1	9
27 - 00	6	2	10	6	2	10	6	2	10	6	2	10
28 - 30	7	3	11	7	3	11	7	3	11	7	3	11
30 - 00	8	4	12	8	4	12	8	4	12	8	4	12

Chaturvimshamsha (D-24)

Degrees upto		*Odd signs*	*Even signs*
1 - 15	16 - 15	5	4
2 - 30	17 - 30	6	5
3 - 45	18 - 45	7	6
5 - 00	20 - 00	8	7
6 - 15	21 - 15	9	8
7 - 30	22 - 30	10	9
8 - 45	23 - 45	11	10
10 - 00	25 - 00	12	11
11 - 15	26 - 15	1	12
12 - 30	27 - 30	2	1
13 - 45	28 - 45	3	2
15 - 00	30 - 00	4	3

Saptavimshamsha (D-27)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
1 - 06 -40	1	4	7	10	1	4	7	10	1	4	7	10
2 - 13 -20	2	5	8	11	2	5	8	11	2	5	8	11
3 - 20 -00	3	6	9	12	3	6	9	12	3	6	9	12
4 - 26 -40	4	7	10	1	4	7	10	1	4	7	10	1
5 - 33 -20	5	8	11	2	5	8	11	2	5	8	11	2
6 - 40 -00	6	9	12	3	6	9	12	3	6	9	12	3
7 - 46 -40	7	10	1	4	7	10	1	4	7	10	1	4
8 - 53 -20	8	11	2	5	8	11	2	5	8	11	2	5
10 - 00 -00	9	12	3	6	9	12	3	6	9	12	3	6
11 - 06 -40	10	1	4	7	10	1	4	7	10	1	4	7
12 - 13 -20	11	2	5	8	11	2	5	8	11	2	5	8
13 - 20 -00	12	3	6	9	12	3	6	9	12	3	6	9
14 - 26 -40	1	4	7	10	1	4	7	10	1	4	7	10
15 - 33 -20	2	5	8	11	2	5	8	11	2	5	8	11
16 - 40 -00	3	6	9	12	3	6	9	12	3	6	9	12
17 - 46 -40	4	7	10	1	4	7	10	1	4	7	10	1
18 - 53 -20	5	8	11	2	5	8	11	2	5	8	11	2
20 - 00 -00	6	9	12	3	6	9	12	3	6	9	12	3
21 - 06 -40	7	10	1	4	7	10	1	4	7	10	1	4
22 - 13 -20	8	11	2	5	8	11	2	5	8	11	2	5
23 - 20 -00	9	12	3	6	9	12	3	6	9	12	3	6
24 - 26 -40	10	1	4	7	10	1	4	7	10	1	4	7
25 - 33 -20	11	2	5	8	11	2	5	8	11	2	5	8
26 - 40 -00	12	3	6	9	12	3	6	9	12	3	6	9
27 - 46 -40	1	4	7	10	1	4	7	10	1	4	7	10
28 - 53 -20	2	5	8	11	2	5	8	11	2	5	8	11
30 - 00 -00	3	6	9	12	3	6	9	12	3	6	9	12

Trimshamsha (D-30)

Degree	*Odd Sign*	*Degree*	*Even Sign*
5	1	5	2
10	11	12	6
18	9	20	12
25	3	25	10
30	7	30	8

Khavedamsha (D-40)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
0 - 45	1	7	1	7	1	7	1	7	1	7	1	7
1 - 30	2	8	2	8	2	8	2	8	2	8	2	8
2 - 15	3	9	3	9	3	9	3	9	3	9	3	9
3 - 00	4	10	4	10	4	10	4	10	4	10	4	10
3 - 45	5	11	5	11	5	11	5	11	5	11	5	11
4 - 30	6	12	6	12	6	12	6	12	6	12	6	12
5 - 15	7	1	7	1	7	1	7	1	7	1	7	1
6 - 00	8	2	8	2	8	2	8	2	8	2	8	2
6 - 45	9	3	9	3	9	3	9	3	9	3	9	3
7 - 30	10	4	10	4	10	4	10	4	10	4	10	4
8 - 15	11	5	11	5	11	5	11	5	11	5	11	5
9 - 00	12	6	12	6	12	6	12	6	12	6	12	6
9 - 45	1	7	1	7	1	7	1	7	1	7	1	7
10 - 30	2	8	2	8	2	8	2	8	2	8	2	8
11 - 15	3	9	3	9	3	9	3	9	3	9	3	9
12 - 00	4	10	4	10	4	10	4	10	4	10	4	10
12 - 45	5	11	5	11	5	11	5	11	5	11	5	11
13 - 30	6	12	6	12	6	12	6	12	6	12	6	12
14 - 15	7	1	7	1	7	1	7	1	7	1	7	1
15 - 00	8	2	8	2	8	2	8	2	8	2	8	2
15 - 45	9	3	9	3	9	3	9	3	9	3	9	3
16 - 30	10	4	10	4	10	4	10	4	10	4	10	4
17 - 15	11	5	11	5	11	5	11	5	11	5	11	5
18 - 00	12	6	12	6	12	6	12	6	12	6	12	6
18 - 45	1	7	1	7	1	7	1	7	1	7	1	7
19 - 30	2	8	2	8	2	8	2	8	2	8	2	8
20 - 15	3	9	3	9	3	9	3	9	3	9	3	9
21 - 00	4	10	4	10	4	10	4	10	4	10	4	10
21 - 45	5	11	5	11	5	11	5	11	5	11	5	11
22 - 30	6	12	6	12	6	12	6	12	6	12	6	12
23 - 15	7	1	7	1	7	1	7	1	7	1	7	1
24 - 00	8	2	8	2	8	2	8	2	8	2	8	2
24 - 45	9	3	9	3	9	3	9	3	9	3	9	3
25 - 30	10	4	10	4	10	4	10	4	10	4	10	4
26 - 15	11	5	11	5	11	5	11	5	11	5	11	5
27 - 00	12	6	12	6	12	6	12	6	12	6	12	6
27 - 45	1	7	1	7	1	7	1	7	1	7	1	7
28 - 30	2	8	2	8	2	8	2	8	2	8	2	8
29 - 15	3	9	3	9	3	9	3	9	3	9	3	9
30 - 00	4	10	4	10	4	10	4	10	4	10	4	10

Akshvedamsha (D-45)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
0 - 40	1	5	9	1	5	9	1	5	9	1	5	9
1 - 20	2	6	10	2	6	10	2	6	10	2	6	10
2 - 00	3	7	11	3	7	11	3	7	11	3	7	11
2 - 40	4	8	12	4	8	12	4	8	12	4	8	12
3 - 20	5	9	1	5	9	1	5	9	1	5	9	1
4 - 00	6	10	2	6	10	2	6	10	2	6	10	2
4 - 40	7	11	3	7	11	3	7	11	3	7	11	3
5 - 20	8	12	4	8	12	4	8	12	4	8	12	4
6 - 00	9	1	5	9	1	5	9	1	5	9	1	5
6 - 40	10	2	6	10	2	6	10	2	6	10	2	6
7 - 20	11	3	7	11	3	7	11	3	7	11	3	7
8 - 00	12	4	8	12	4	8	12	4	8	12	4	8
8 - 40	1	5	9	1	5	9	1	5	9	1	5	9
9 - 20	2	6	10	2	6	10	2	6	10	2	6	10
10 - 00	3	7	11	3	7	11	3	7	11	3	7	11
10 - 40	4	8	12	4	8	12	4	8	12	4	8	12
11 - 20	5	9	1	5	9	1	5	9	1	5	9	1
12 - 00	6	10	2	6	10	2	6	10	2	6	10	2
12 - 40	7	11	3	7	11	3	7	11	3	7	11	3
13 - 20	8	12	4	8	12	4	8	12	4	8	12	4
14 - 00	9	1	5	9	1	5	9	1	5	9	1	5
14 - 40	10	2	6	10	2	6	10	2	6	10	2	6
15 - 20	11	3	7	11	3	7	11	3	7	11	3	7
16 - 00	12	4	8	12	4	8	12	4	8	12	4	8
16 - 40	1	5	9	1	5	9	1	5	9	1	5	9
17 - 20	2	6	10	2	6	10	2	6	10	2	6	10
18 - 00	3	7	11	3	7	11	3	7	11	3	7	11
18 - 40	4	8	12	4	8	12	4	8	12	4	8	12
19 - 20	5	9	1	5	9	1	5	9	1	5	9	1
20 - 00	6	10	2	6	10	2	6	10	2	6	10	2
20 - 40	7	11	3	7	11	3	7	11	3	7	11	3
21 - 20	8	12	4	8	12	4	8	12	4	8	12	4
22 - 00	9	1	5	9	1	5	9	1	5	9	1	5
22 - 40	10	2	6	10	2	6	10	2	6	10	2	6
23 - 20	11	3	7	11	3	7	11	3	7	11	3	7
24 - 00	12	4	8	12	4	8	12	4	8	12	4	8
24 - 40	1	5	9	1	5	9	1	5	9	1	5	9
25 - 20	2	6	10	2	6	10	2	6	10	2	6	10
26 - 00	3	7	11	3	7	11	3	7	11	3	7	11
26 - 40	4	8	12	4	8	12	4	8	12	4	8	12
27 - 20	5	9	1	5	9	1	5	9	1	5	9	1
28 - 00	6	10	2	6	10	2	6	10	2	6	10	2
28 - 40	7	11	3	7	11	3	7	11	3	7	11	3
29 - 20	8	12	4	8	12	4	8	12	4	8	12	4
30 - 00	9	1	5	9	1	5	9	1	5	9	1	5

Shashtiamsha (D-60)

Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
0 - 30	1	2	3	4	5	6	7	8	9	10	11	12
1 - 00	2	3	4	5	6	7	8	9	10	11	12	1
1 - 30	3	4	5	6	7	8	9	10	11	12	1	2
2 - 00	4	5	6	7	8	9	10	11	12	1	2	3
2 - 30	5	6	7	8	9	10	11	12	1	2	3	4
3 - 00	6	7	8	9	10	11	12	1	2	3	4	5
3 - 30	7	8	9	10	11	12	1	2	3	4	5	6
4 - 00	8	9	10	11	12	1	2	3	4	5	6	7
4 - 30	9	10	11	12	1	2	3	4	5	6	7	8
5 - 00	10	11	12	1	2	3	4	5	6	7	8	9
5 - 30	11	12	1	2	3	4	5	6	7	8	9	10
6 - 00	12	1	2	3	4	5	6	7	8	9	10	11
6 - 30	1	2	3	4	5	6	7	8	9	10	11	12
7 - 00	2	3	4	5	6	7	8	9	10	11	12	1
7 - 30	3	4	5	6	7	8	9	10	11	12	1	2
8 - 00	4	5	6	7	8	9	10	11	12	1	2	3
8 - 30	5	6	7	8	9	10	11	12	1	2	3	4
9 - 00	6	7	8	9	10	11	12	1	2	3	4	5
9 - 30	7	8	9	10	11	12	1	2	3	4	5	6
10 - 00	8	9	10	11	12	1	2	3	4	5	6	7
10 - 30	9	10	11	12	1	2	3	4	5	6	7	8
11 - 00	10	11	12	1	2	3	4	5	6	7	8	9
11 - 30	11	12	1	2	3	4	5	6	7	8	9	10
12 - 00	12	1	2	3	4	5	6	7	8	9	10	11
12 - 30	1	2	3	4	5	6	7	8	9	10	11	12
13 - 00	2	3	4	5	6	7	8	9	10	11	12	1
13 - 30	3	4	5	6	7	8	9	10	11	12	1	2
14 - 00	4	5	6	7	8	9	10	11	12	1	2	3
14 - 30	5	6	7	8	9	10	11	12	1	2	3	4
15 - 00	6	7	8	9	10	11	12	1	2	3	4	5
15 - 30	7	8	9	10	11	12	1	2	3	4	5	6
16 - 00	8	9	10	11	12	1	2	3	4	5	6	7
16 - 30	9	10	11	12	1	2	3	4	5	6	7	8
17 - 00	10	11	12	1	2	3	4	5	6	7	8	9
17 - 30	11	12	1	2	3	4	5	6	7	8	9	10
18 - 00	12	1	2	3	4	5	6	7	8	9	10	11
18 - 30	1	2	3	4	5	6	7	8	9	10	11	12

Shashtiamsha (D-60) (contd.)

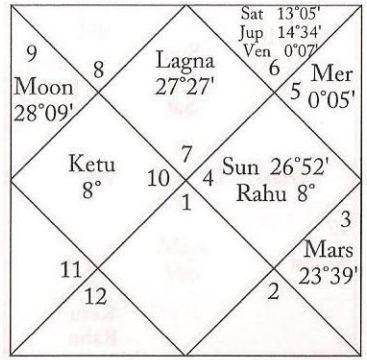
Signs / Degrees	1	2	3	4	5	6	7	8	9	10	11	12
19 - 00	2	3	4	5	6	7	8	9	10	11	12	1
19 - 30	3	4	5	6	7	8	9	10	11	12	1	2
20 - 00	4	5	6	7	8	9	10	11	12	1	2	3
20 - 30	5	6	7	8	9	10	11	12	1	2	3	4
21 - 00	6	7	8	9	10	11	12	1	2	3	4	5
21 - 30	7	8	9	10	11	12	1	2	3	4	5	6
22 - 00	8	9	10	11	12	1	2	3	4	5	6	7
22 - 30	9	10	11	12	1	2	3	4	5	6	7	8
23 - 00	10	11	12	1	2	3	4	5	6	7	8	9
23 - 30	11	12	1	2	3	4	5	6	7	8	9	10
24 - 00	12	1	2	3	4	5	6	7	8	9	10	11
24 - 30	1	2	3	4	5	6	7	8	9	10	11	12
25 - 00	2	3	4	5	6	7	8	9	10	11	12	1
25 - 30	3	4	5	6	7	8	9	10	11	12	1	2
26 - 00	4	5	6	7	8	9	10	11	12	1	2	3
26 - 30	5	6	7	8	9	10	11	12	1	2	3	4
27 - 00	6	7	8	9	10	11	12	1	2	3	4	5
27 - 30	7	8	9	10	11	12	1	2	3	4	5	6
28 - 00	8	9	10	11	12	1	2	3	4	5	6	7
28 - 30	9	10	11	12	1	2	3	4	5	6	7	8
29 - 00	10	11	12	1	2	3	4	5	6	7	8	9
29 - 30	11	12	1	2	3	4	5	6	7	8	9	10
30 - 00	12	1	2	3	4	5	6	7	8	9	10	11

Example

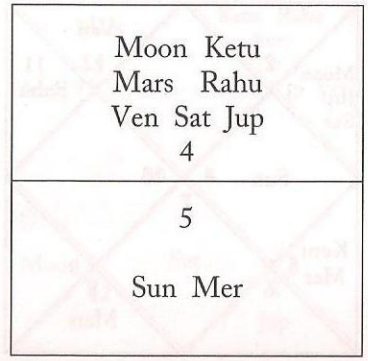
One birth chart with divisional charts is taken here for the purpose of illustration. This example will illustrate the casting of divisional charts by fixing the lagna sign as well as placement of planets in various divisional charts.

Date of birth	13 August 1981
Time of birth	12 : 50 (Noon)
Place of birth	New Delhi

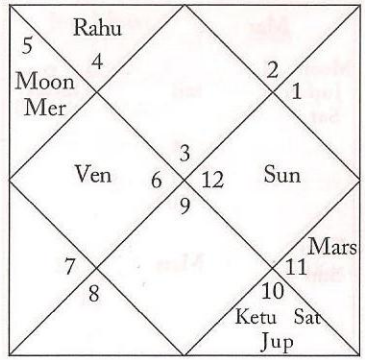
Rashi (D-1)



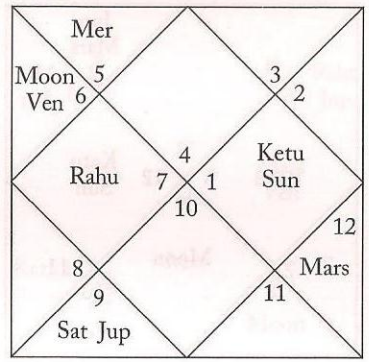
Hora (D-3)



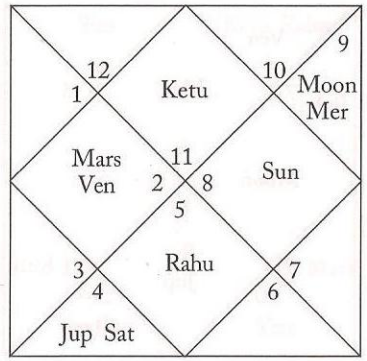
Dreshkon (D-3)



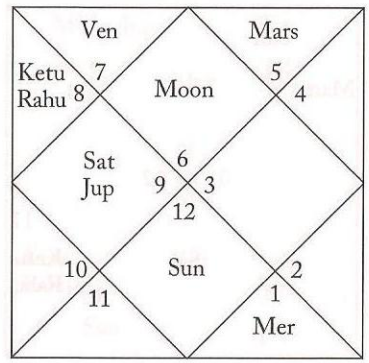
Chaturthamsha (D-4)



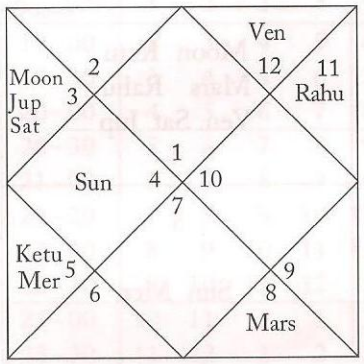
Panchamsha (D-5)



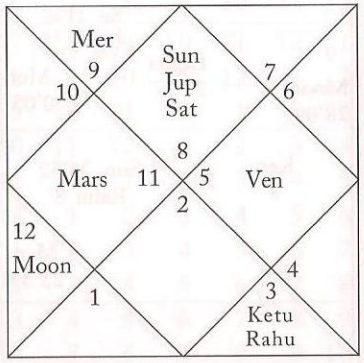
Shashtamsha (D-6)



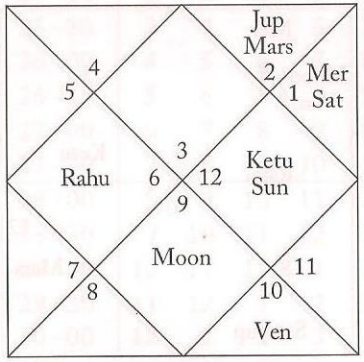
Saptamsha (D-7)



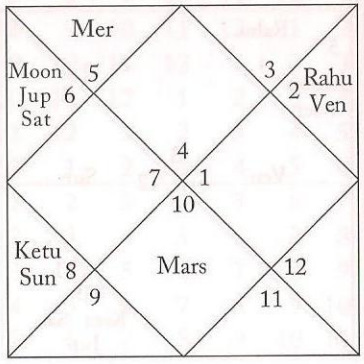
Ashtamsha (D-8)



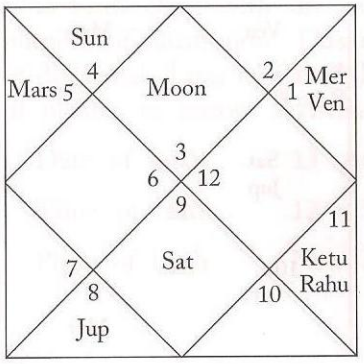
Navamsha (D-9)



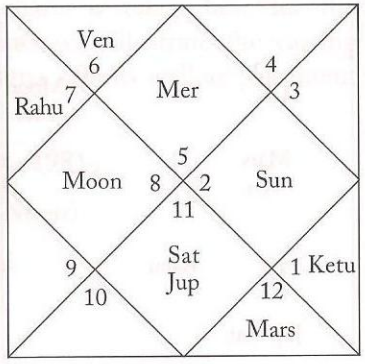
Dashamsha (D-10)



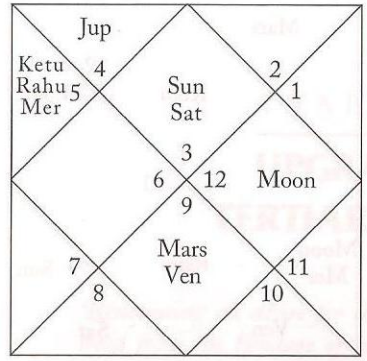
Ekadashamsha (D-11)



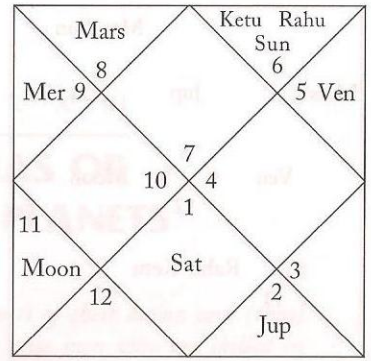
Dwadashamsha (D-12)



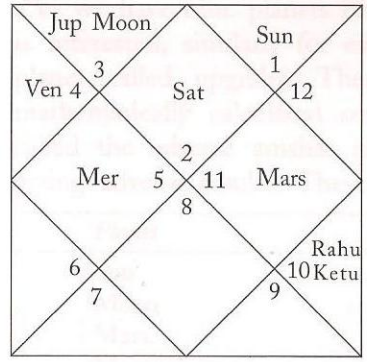
Shodashamsha (D-16)



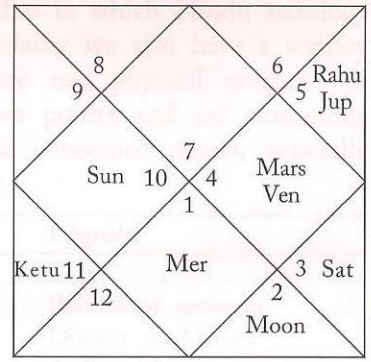
Vimshamsha (D-20)



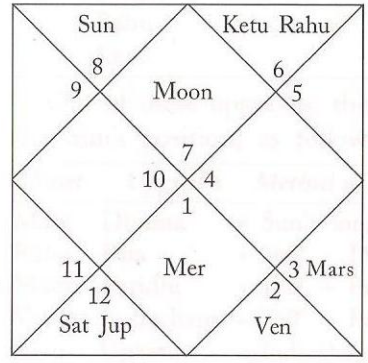
Chaturvimshamsha (D-24)



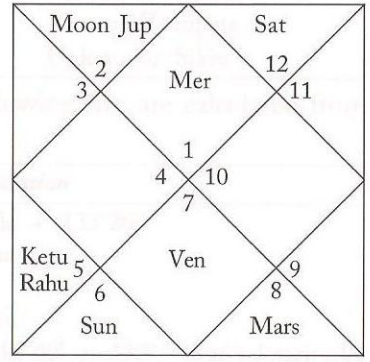
Saptvimshamsha (D-27)



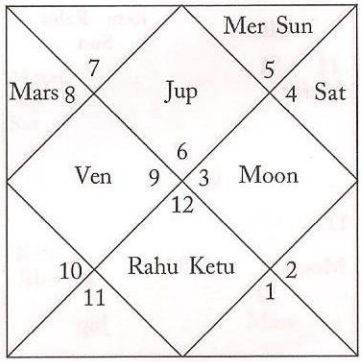
Trimshamsha (D-30)



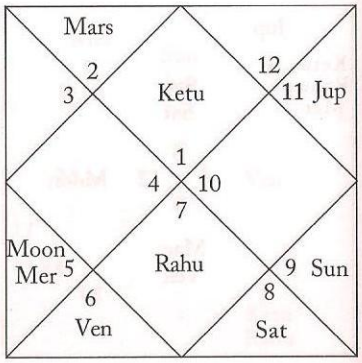
Khavedamsha (D-40)



Akshvedamsha (D-45)



Shashtiamsha (D-60)



CHAPTER XIII

UPGRAHAS OR TERTIARY PLANETS

"Renouncing all desire for the fruits of their action and (thus) freed from the bondage of birth, wise men who are skilled in the equanimous way of discrimination achieve the pure, immortal state."

–Bhagwad Gita II. 51.

As we have nine planets or grahas in which Hindu astrology is interested, similarly for each planet we also have a tertiary planet called upgraha. These are not physical entities but mathematically calculated sensitive points and are commonly called the adverse amshas of the concerned planet, generally giving adverse results. These are :

Planet	*Upgraha*
Sun	Kala
Moon	Paridhi or parivesh
Mars	Dhuma or Mrityu
Mercury	Ardhaprahara
Jupiter	Yamagantaka
Venus	Indrachapa or Kodanda
Saturn	Mandi or Gulika
Rahu	Pata or Vyatipata
Ketu	Upketu or Sikhi

Out of these upgrahas, the following five are calculated from the Sun's position, as follows :

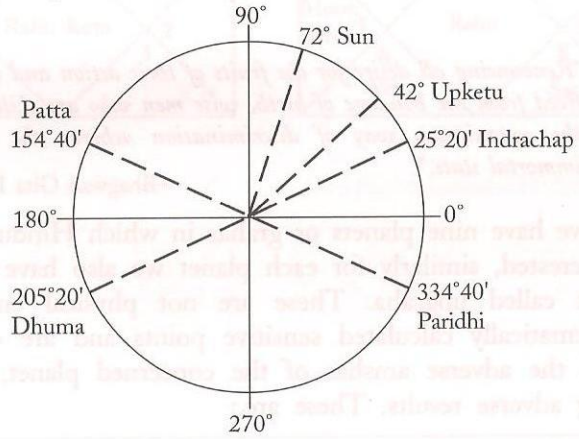
Planet	*Upgraha*	*Method of calculation*
Mars	Dhuma	= Sun's longitude + 133°20'
Rahu	Pata	= 360° - Dhuma
Moon	Paridhi	= 180° + Pata
Venus	Indrachapa	= 360° - Paridhi
Ketu	Upketu	= Indrachapa + 16°40' or 330° + Sun's longitude.

We can understand by taking an example also :

Take Sun's longitude as 72°

Dhuma	72° + 133°20'	= 205°20'
Pata	360° - 205°20'	= 154°40'
Paridhi	180° + 154°40'	= 334°40'
Indrachapa	360° - 334°40'	= 25°20'
Upketu	25°20' + 16°40'	= 42°

Diagramatically it can be shown as follows :



The upgrahas of Moon, Mars, Venus, Rahu and Ketu are calculated as above. For the remaining four upgrahas of Sun (Kala), Mercury (Ardhaprahara), Jupiter (Yamagantaka), and Saturn (Mandi) the following method is employed.

Mandi : Calculation of Mandi or Gulika has been described as follows : When the length of the day or night is equivalent to 30 ghatis, the position of Mandi will be at the end of the following ghatis. This will also depend on the weekday and the birth during day or night time.

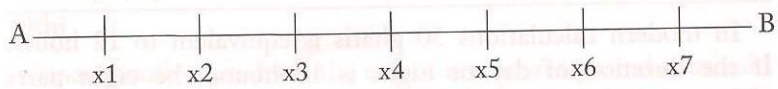
Weekday	*Birth during day*	*Birth during night*
Sunday	26	10
Monday	22	6
Tuesday	18	2
Wednesday	14	26
Thursday	10	22
Friday	6	18
Saturday	2	14

Whenever the duration of the day or night is not exactly 30 ghatis, the above seven divisions should be increased or decreased accordingly.

In fact various methods are adopted by astrologers based on their experience, conventions and conditioning. Another method which is only a derivative of the method explained above is as follows : The duration of the day or night is divided into eight equal parts. In case of birth during the day time, the first part is allotted to the lord of the day followed by remaining lords of the week in cyclic order. The 8th part is lordless or 'nireesh'.

Similarly if the birth is during night, out of eight equal parts, the first seven are allotted to the lords of planets starting from the 5th weekday. The 8th period is again without lordship. In this method the period allotted to Saturn is called Mandi, Jupiter's period is Yamagantaka, Sun's period is Kala and Mercury's period is called Ardhaprahara. For calculation of placement of these upgrahas in the horoscope, ascendant is calculated at the beginning of each period which gives the longitude of the corresponding upgraha.

There is however a controversy in this regard. When we divide the duration of day or night into eight equal parts and beginning of each part is taken as the longitude of the upgraha, the last or 8th part remains lordless. The duration of day or night signified by points A and B in the diagram is divided into eight parts by drawing seven equidistant lines. There is an acceptable view that the point of upgraha should be taken as the end of each period signified by x1, x2 ... x7. In this scheme there will be no period left as lordless.



There seems to be some logic in this reasoning. The ascendant therefore should be calculated for the end of each period and allotted in the cyclic order to the planets starting from the day of the week for day birth, and the 5th weekday for night birth, as explained above.

Ignoring the controversy of calculation of ascendant for beginning or end of each period, which is left to the judgement and research by readers, the various upgrahas during day birth

will start from the day of the week. For night birth however the starting period will be 5th from the lord of the day and thereafter will follow the cyclic order of weekdays and the corresponding upgrahas. The following two tables only suggest that on Sunday (day time birth) the 1st division will have upgraha Kala followed by the remaining divisions with their corresponding upgrahas. Similarly on a Tuesday (night time birth) the 1st division will have upgraha Mandi and so on.

Birth during day time

Weekdays	*Lord*	*Upgraha*
Sunday	Sun	Kala
Monday	Moon	Paridhi
Tuesday	Mars	Dhuma
Wednesday	Mercury	Ardhaprahara
Thursday	Jupiter	Yamagantaka
Friday	Venus	Indrachap
Saturday	Saturn	Mandi

Birth during night time

Weekdays	*Lord*	*Upgraha*
Sunday	Jupiter	Yamagantaka
Monday	Venus	Indrachapa
Tuesday	Saturn	Mandi
Wednesday	Sun	Kala
Thursday	Moon	Paridhi
Friday	Mars	Dhuma
Saturday	Mercury	Ardhaprahara

In modern calculations 30 ghatis is equivalent to 12 hours. If the duration of day or night is 12 hours, the eight parts will comprise of 1 hour and 30 minutes each. This each division or period is to be added from the sunrise time to arrive at the division to be found. Further whenever the duration of day or night is more or less than 12 hours, the proportion will vary accordingly.

CHAPTER XIV

PANCHANG

"While objects of sensual pleasure cease to be for the man who withdraws his senses from them, his desire for these objects yet remain; but the desires of the man of discrimination are completely erased by his perception of God."

- Bhagwad Gita II. 59.

The word Panchang is derived from the combination of two words panch + anga which literally means five parts.

For ascertaining an auspicious opportune moment for starting any important work the use of these five parts is very important. This is called Muhurat. Any Hindu ephemeris contains these details on daily basis which is conveniently made use by astrologers for the purpose. The Hindu ephemeris itself is called a Panchang. These five parts are :

1. Tithi
2. Vaar
3. Nakshatra
4. Yoga
5. Karna

Tithi

A lunar month starts from the end of one amavasya and continues till the next amavasya. On the day of amavasya the longitude of the Moon and the Sun are equal. The increase of the difference of their longitudes gives rise to tithi. The method of calculation of tithis is :

$$\frac{\text{Longitude of Moon - Longitude of Sun}}{12^\circ}$$

The first tithi starts when Moon moves ahead of the Sun and continues till the difference between the two reaches 12°.

Thereafter next tithi starts. Let us work out an example :

Longitude of Moon = 2^{s}23°43'
Longitude of Sun = 1^{s}0°3'
Difference = 1^{s}23°40' = 53°40'

$$\text{Dividing by 12} = 4\ \frac{5°40'}{12}$$

This means that 4 tithis have passed and the 5th tithi is running. Further, as explained in the earlier chapter one lunar month has two pakshas, the shukla paksha and the krishna paksha or bright half and dark half respectively. Upto the difference of longitude of 180°, the tithis so calculated are of shukla paksha and beyond 180° to 360° difference the tithis are of krishna paksha, there being 15 tithis in each paksha.

The Hindu names of tithis and their equivalent numbers is given below. The same name holds good in both the pakshas except that in shukla paksha the 15th tithi is called Purninma or the Full Moon and in krishna paksha the 15th tithi is called Amavasya or the New Moon.

Name	*No.*	*Name*	*No.*	*Name*	*No.*
Pratipada	1	Shashti	6	Ekadashi	11
Dwitiya	2	Saptami	7	Dwadashi	12
Tritiya	3	Ashtami	8	Tryodashi	13
Chaturthi	4	Navami	9	Chaturdashi	14
Panchami	5	Dashami	10	Purnima/Amavasya	15

Vaar

It is the day of the week and is calculated for various purposes like fixing muhurat or hora etc. One tropical or sidereal year has 365.25 solar days approx. Whereas generally one year has 365 days. To correct this difference, every fourth year is a leap year having 366 days. But in case of years of completed centuries the leap years are those divisible by 400. Hence the years 400, 800, 1200, 1600 and 2000 were leap years.

The method of calculation of the day of week is simple. 1st January of 1 A.D. was a Monday. In one year if we remove the completed weeks we get one extra day (365 ÷ 7 = 52, remainder = 1). Similarly in a leap year there are two extra days. In 100 years there will be 5 extra days (100 + 24 leap days = 124 ÷ 7 = 17, remainder 5). Thus Vaar of any date can be found out. Let us calculate the day of the week on 21st January 1995.

No. of extra days in 1600 years = 0
No. of extra days in 300 years = 5 × 3 ÷ 7, Rem. = 1
No. of extra days in 94 years = 94 ÷ 7, Rem. = 3
No. of leap days in 94 years = 23 ÷ 7, Rem. = 2
No. of extra days in January 95 = 21 ÷ 7, Rem. = 0
Total = 6

Counting from Monday as 1, 21st January 1995 was a Saturday.

Nakshatra

Hindu astrology is peculiar in its emphasis on nakshatra divisions. The zodiac of 360° is divided into 27 nakshatras, having a longitude of 13°20' each. To find out the nakshatra in which a planet is placed, divide the longitude of the planet by 13°20'. Although nakshatra position of any planet can be found out yet in Panchang calculations it is always the nakshatra position of the Moon which is required for finding out the birth star called *Janma nakshatra* and thereby to find out the dasha balance at birth.

Assume Moon's longitude as 236°43'. Divide it by 13°20', we get :

$$\frac{236 \times 60 + 43}{13 \times 60 + 20} = \frac{14203'}{800'}$$

$$= 17.75375 \quad \text{or} \quad 17\ \frac{603}{800}$$

Hence Moon is in 18th nakshatra which is Jyeshtha in the 4th pada or part. In using the calculator if the figure after decimal is less than .25 it is the 1st pada, .25 to .50 2nd pada, .5 to .75 3rd pada and .75 onwards 4th pada. The names of nakshatras along with their extent in longitude have been given in the earlier chapter.

Yoga

The word literally means combination or addition. There are 27 yogas which are formed by the addition of longitudes of the Sun and the Moon. The name of a yoga itself signifies whether it is auspicious or inauspicious. The longitude of the Sun and the Moon are added and then divided by 13°20'. Let us work out an example:

Longitude of Sun	4ˢ23°34'
Longitude of Moon	5ˢ16°12'
Total	10ˢ9°46' ÷ 13°20' = 23.2325

Or converting them into minutes18586 ÷ 800= 23.2325

Thus 23 yogas have elapsed and 24th yoga called Shukla is running. The names of the 27 yogas are given below:

Names of Yogas		
1. Vishkumbha	10. Ganda	19. Parigha
2. Priti	11. Vridhi	20. Shiva
3. Ayushman	12. Dhruva	21. Siddha
4. Saubhagya	13. Vyaghata	22. Sadhya
5. Shobhan	14. Harshana	23. Shubha
6. Atiganda	15. Vajra	24. Shukla
7. Sukarma	16. Siddhi	25. Brahma
8. Dhrti	17. Vyatipata	26. Indra
9. Shula	18. Variyan	27. Vaidhrti

Karana

A tithi is calculated by finding out the difference between the longitude of Moon and Sun and then dividing it by 12. A Karana on the other hand is calculated by finding out the difference between the longitudes of Moon and Sun and then dividing it by 6. In other words it means that the time taken by Moon to gain 6° over that of the Sun leads to one Karana.

$$\text{Karana} = \frac{\text{Longitude of Moon - Longitude of Sun}}{6^\circ}$$

This also eventually means that as against 30 tithis, there are 60 karanas. The names of the karanas are :

Names of Karanas	
1. Bav	7. Vishti
2. Balav	8. Shakuni
3. Kaulav	9. Chatushpad
4. Taitil	10. Nag
5. Gar	11. Kintughna
6. Vanij	

The cycle of counting starts from Kintughna. Then the first 7 karanas repeat in the cyclic order eight times followed by the remaining three i.e. 8th to 10th. In the example taken by us for calculation of tithi, if we divide the difference of longitude of Moon and Sun of 53°40' by 6 we get 8.9444. Which means that 8 Karana have passed and the 9th Karana is running, or the first karna of 5th tithi is running. For easy reference, a table of Karanas can be used which gives the Karana directly from the running tithi.

Tithi	*1st Karana*	*2nd Karana*	*Tithi*	*1st Karana*	*2nd Karana*
1.	Kintughna	1	16.	2	3
2.	2	3	17.	4	5
3.	4	5	18.	6	7
4.	6	7	19.	1	2
5.	1	2	20.	3	4
6.	3	4	21.	5	6
7.	5	6	22.	7	1
8.	7	1	23.	2	3
9.	2	3	24.	4	5
10.	4	5	25.	6	7
11.	6	7	26.	1	2
12.	1	2	27.	3	4
13.	3	4	28.	5	6
14.	5	6	29.	7	Shakuni
15.	7	1	30.	Chatushpad	Naga

CHAPTER XV

BRIEF HISTORY OF INDIAN ASTRONOMY

"Destiny and human effort depend upon each other. The high-minded perform good and great deeds. It is only eunuchs who worship fate."

- Mahabharata, XII. 139. 81.

The history and development of Indian astronomy may be briefly discussed in the following sequence of unknown and known periods.

Prehistoric to 500 B.C. (The vedic and vedang age)

With the advent of man on the Earth, the observations of celestial phenomenon must have enthralled the early man and with passage of time hypotheses leading to conclusions derived. The origin of any learning process lies in the logical questions of *why* and *how*. The period upto 10000 B.C. lies in utter darkness as no literature is available, however the early civilisations of this era were aware of days, pakshas, ayanas, months and years i.e. the measures of time. Needless to say that all these observations were lunar based as Moon provided the greatest clock and still continues to do so.

The Jain literature also throws light on prehistoric thought processes which have come down to us from generations. It reveals that even ten thousand years ago astronomical facts were known and related to astrological significations. Knowledge of planets and nakshatras were clearly available during this period.

From 10000 B.C. onwards the vedic era started in which jyotisha was one of the six vedangas. The vedas may have been

written around 5000 B.C. In the four vedas clear references are available to show that even during those times people were aware of orbits of planets, nakshatras, seasons, ayanas, yugas, days/months, adhika/kshaya of tithis and months, eclipses, meteors and comets, showing its distinct development during this period.

Rigveda the oldest of vedas refers to planets and their significations. A year was divided into 12 lunar months and every three years or so to adjust the lunar months with solar years the concept of luni-solar year with adhika maas or mal maas came into being. Vedic months find a reference in taitriya samhita. Twelve purnimas and amavasyas of twelve lunar months together with their names and effects find a mention. Ritus or seasons are explained in detail. Uttarayana and dakshinayana were known. It had been observed that for nearly nine months in a year Venus could be seen at sunrise time in the east. The phenomenon of rising, setting and combustion of planets as also the signs of zodiac were known in that period.

Yajurveda describes that there were 27 nakshatras. Atharvaveda on the other hand speaks about the propitiations to be performed for a child born in moola nakshatra and gandantas. It gives detailed explanation to the janma nakshatra in the form of *tara vichar* which is used till date.

In the great epic Mahabharata the duration of vanvaas of Pandavas was disputed and was finally decided based on two adhikmaas during the period of five years. Even during that period a paksha having 13 tithis (in which two kshay tithis occur) was considered inauspicious.

The vedanga age may have started around 2000 B.C. References are available to show that summer solstice was then in Magha and Sun became Uttarayana in mid-Dhanishta. Summer solstice is now in the beginning of Ardra. From 0° Magha to 0° Ardra there is a shift of about 53°. The rate of precession of equinox is about 50.29" per year and therefore 1° shift will take place in about 72 years. The shift of 53° as above will therefore take place in 53 × 72 = 3816 years ago which roughly comes to around 1800 B.C. There are controversies in this regard and some experts have calculated this period to have started around 1400 B.C. and yet others consider it to be even later than that.

Rigveda was compiled by Lagadha rishi and is a compilation of 36 *karikas* or explanatory slokas. Yajurveda had 49 and Atharvaveda 162 slokas. This period saw two viewpoints of geocentric as well as heliocentric system.

With the advancement in writing of books the spread of knowledge helped in its systematic growth . The six parts of vedanga (referred to in Chapter I) became distinctly clear. Their references are found in later works. This period also saw the development of Muhurat. The scientific knowledge during that period was not competent to the extent of calculating the speed, position, longitude and latitude of all the planets. Yet the astronomical knowledge, where all the calculations regarding planets were based on observations, had become so advanced even in those times is amazing. The creators of sidhantas during that period were Gods and not humans. They were Surya, Soma, Brihaspati, Narada and Brahma etc.

500 B.C. to 1000 A.D.

The period can truly be called the developmental era of hindu astronomy. 18 sidhantas were given by great astrologers or astronomers. They were Surya, Pitamaha, Vyas, Vashishta, Atri, Prashar, Kashyap, Narada, Garga, Miricha, Manu, Angira, Lomesh, Paulisha, Chyavana, Yavana, Bhrigu and Shaunaka. Some of these great exponents wrote only samhitas, sidhantas or both. The great astrologer Varahamihira considered only five of them in his famous work *Panchsidhantika.* These were as follows :

1. ***Pitamaha Sidhanta*** : is as old as Rig jyotisha. The two subsequent authors Brahmgupta and Bhaskaracharya based their sidhantas on Pitamaha sidhanta itself. It describes the detailed calculations of Sun and Moon only.
2. ***Vashishta Sidhanta*** : has only 12 slokas and is an amended version of Pitamaha sidhanta. It is also thought to have been written by Vishnu Chandra.
3. ***Roumaka Sidhanta*** : written by Latdeva was based on some greek sidhanta. It gives very elaborate astronomical calculations.

4. ***Paulisha Sidhanta*** : was based on some greek sidhanta.
5. ***Surya Sidhanta*** : was written by rishi Surya in the treta yuga. The calculations justify that it may have been written around 100 B.C.

Kautilya's famous work *Arthashastra* written in 4th century B.C. reveals that during his period mathematical astrology had become well established.

Maharishi Parashar's era is not clearly known. But his great Brihat Parashar Hora Shastra was probably written before Varahamihira which may be around 2nd or 3rd century. The timing of these eras have a lot of controversies.

The systematic historical period started from Aryabhata-I born in 476 A.D. who wrote his famous work Aryabhatiya. He stated that the Earth is in orbit around the Sun. The credit for this discovery had however been given to Copernicus in 1543 A.D. Aryabhata II wrote his sidhanta called Maha aryabhatiya which is an amended version of Aryabhatiya.

The end of this era of 500 A.D. to 1000 A.D. was the period when astrological and astronomical research was at its peak. One of the greatest researchers of this period was Varahamihira born in 505 A.D. He wrote Brihatjataka which is still considered to be a great astrological treatise. The division of astrology into three skandas called sidhanta, samhita and hora became prominent. Other notable astrologers of the period were :

1. ***Kalyana Verma*** : 578 A.D. wrote 'Saravali" which is based on Maharishi Parashar's all time great work "Brihat Parashar Hora Shastra."
2. ***Brahmgupta*** : 598 A.D. At the age of 30 he wrote Brahmgupta sidhanta. He was a great researcher astronomer and made contributions in the field of mathematical astrology. But inspite of his other achievements he erred in being an opponent of Aryabhata I in opposing his hypothesis of Earth being in orbit around the Sun.
3. ***Prithuyashas*** : He was the illustrious son of Varahamihira and wrote Shatpanchasika the great compendium of 56 shlokas on Prashna shastra.

4. ***Bhatotpala*** : 888 A.D. wrote commentaries on the works of Varahamihira and Brahmgupta. He was responsible for the fame which Varahamihira deserved.

1000 A.D. till date

This period of modern advancements from 1000 A.D. till date saw innumerable people who contributed towards the growth of this great science. Some of the notable ones were as follows:

1. ***Shripati*** : Said to have been born in 999 A.D., he was a great mathematician astronomer as well as astrologer. One of his famous astronomical treatise is Sidhantshekhar. He also wrote astrological works known as Shripatipadhati, Ratnasaar, Ratnamala and Ratnawali.
2. ***Bhaskaracharya*** : was born in 1114 A.D. During his times he compiled a lot of astronomical data. His most famous works have been Sidhanta shiromani, Karan Kautuhal and Sarvatobhadra. These were based on the principles of Brahma Sidhanta.
3. ***Yavanacharya*** : is considered to be one of the pioneers of Tajik shastra. He had written in Arabic and used the names of Tajik yogas as Iqbal, Ishraaf, Induvar etc.
4. ***Tej Singh*** : Contrary to the belief in favour of Yavanacharya, many researchers opine that in 1300 A.D. Tej Singh the famous astrologer of those times evolved a system of annual horoscopy and the term *Tajik* was coined after his name.
5. ***Durg Dev*** : worked on Horary and in 1089 A.D. authored Ardhakanda and Rishi Samuchaya. These contain excellent references to omens.
6. ***Padma Prabh Suri*** : In the year 1294 he wrote a classical text called Bhuvan Deepak containing only 170 slokas.

Muhurat

Muhurat had gradually gained importance even after the vedic times but it was during this period that famous researches appeared in this field. Notable among them are :

Muhurat Tatwa	1498 A.D.	By Keshvacharya
Muhurat Martanda	1491 A.D.	By Narayana
Muhurat Chintamani	1600 A.D.	By Rambhatt
Muhurat Kalpdruma	1627 A.D.	By Vithal Dixit

During these times there was immense development of muhurta and for every event auspicious muhurta was looked into.

7. ***Anil Pattan*** : In 1175 A.D. he wrote the classical text Narpatijayacharya.
8. ***Keshav*** : born in 1456 A.D. he was a great astrologer of his times. He wrote several books on astronomy related to astrology and was a renowned astrologer too. His famous works include Graha Kautuk, Varsh Graha Sidhi, Jatak Padhati, Tithi Sidhi, Tajik Padhati, Ganita Deepika etc.
9. ***Ganesh Daivagya*** : Stated to have been born in 1517 A.D. He was the illustrious son of Keshav. Ganesh Daivagya wrote his classical work Graha Laghava at the tender age of 13. He also wrote more than a dozen other books which include Laghu tithi chintamani, Brihat tithi chintamani, Sidhanta shiromani commentaries etc. But Graha Laghava remains his greatest work. The difference in position of planets as per his method of calculations and the modern method is very small. The error in mean longitudes of planets is as follows :

Sun	0°0'	
Moon	- 0°2'	At Apogee + 1°55'
Mars	+ 0°44'	
Mercury	+ 8°21'	(At perihelion)
Jupiter	+ 0°58'	
Venus	+ 1°22'	(At perihelion)
Saturn	+ 1°29'	
Rahu	- 0°17'	

The highest error is observed in case of Mercury which is visible for lesser number of days during the year. However in case of true position of planets the error is still smaller and negligible. This shows the development of astronomy as well as mathematical calculations in those times when

there were no modern techniques available and the calculations had to be based on observations only.

10. ***Dhundiraj*** : (1541 A.D.) was the student of Gyanraj the author of Sidhant Sundar which was based on Surya Sidhanta. Dhundiraj wrote Jatak Bharanam containing two thousand slokas.

11. ***Neelkantha*** : was the son of Ananta Daivagya and was born in 1556 A.D. He created the famous Tajik Neelkanthi having three branches called Sanghya tantra, Varsha tantra and Prashna tantra.

12. ***Ram Daivagya*** : Another son of Ananta Daivagya and brother of Neelkantha was born in 1565 A.D. He wrote the famous Muhurta Chintaman'.

13. ***Ranganath*** : Born in 1575 A.D. wrote the famous commentary called Gurarth Prakishika based on Surya Sidhanta.

14. ***Munishwara*** : Son of Ranganath was born in 1603 A.D. He wrote Sidhanta Sarva Bhaum and also wrote commentaries on Bhaskaracharya's Sidhanta Shiromani and Leelavati.

15. ***Divakar*** : Was the son of Narsimhan (author of commentary on Surya Sidhanta called Saurbhashya) and was born in 1606 A.D. At the young age of 19 years he had written the famous Jatak Padhati.

16. ***Kamlakar Bhatt*** : Was another son of Narsimhan and brother of Divakar. He was a great astronomer mathematician and wrote Sidhanta Tatwa Vivek based on Surya Sidhanta. He was a critic of Bhaskaracharya and opposed his theories.

This was the period when the earlier tradition of *Guru shishya parampara* or the method of teacher and taught in astrological knowledge gradually got converted into the family traditions. The secrets of astrology therefore still lies hidden in some known and mostly unknown families all over the country.

The list of eminent astrologers who made excellent contributions in the fields of astronomical research is endless. Some other prominent names are Nityanand, Mahimodaya, Sudhakar Dwivedi, Ranyatan Ojha, Mansagar, Nand Lal, Bal Gangadhar Tilak etc. Raghunath Acharya (1828 A.D.) was the fellow of The Royal Astronomical Society. He wrote Jyotish Chintamani.

Ever since the vedic times the knowledge of Indian Astronomy grew gradually and was at its peak in the meadivial period. All the astronomical data was obtained by mere observations and calculations made accurately. The variations were very small and indicate the level of astronomical knowledge in the ancient times.

CHAPTER XVI

GRAHA BALA - I

"Whose doings are all devoid of design and desire for results, and whose actions are all burnt by the fire of knowledge, him, the sages call wise."

- Bhagwad Gita IV.19

Shadbala is that division of astrology which deals with six different sources of strength or weakness of a planet. The strength which a planet possesses depends on its placement in a bhava, aspects which it receives from other planets, its direction, time, movement etc. The strengths of only 7 planets are considered and Rahu and Ketu are not taken into account.

The different types of strengths are :

1. **Sthana bala - Positional strength**
2. **Dig bala - Directional strength**
3. **Kaala bala - Temporal or time strength**
4. **Chesta bala - Motional strength**
5. **Naisargika bala - Natural strength**
6. **Drishti bala or Drig bala - Aspectual strength**

Uses of shadbala

Evaluation of different types of strength of any planet facilitates :

1. Accuracy in prediction.
2. In ascertaining whether Lagna, Sun or Moon is stronger.
3. In calculation of longevity - Pindayu or amshayu.
4. In giving results on the basis of mahadasha or antardasha and to determine whether the results of mahadasha or

antardasha lord will prevail. Whosoever is powerful between the two will give results according to his benefic or malefic nature.

The strength of a planet is measured in units called Rupa. 1 rupa is equal to 60 shashtiamsha.

Before taking up in detail the individual shadbalas, another concept needs to be understood.

Residential strength or awasiya bala

This is the strength attained by any planet by virtue of its placement in a bhava in a horoscope. In the zodiac of 360°, each division of a rashi has an extent of 30°. The longitudinal length of each bhava is not exactly 30°, but varies. The beginning point of a bhava is called the aarambh sandhi and the ending point is called the viram sandhi. The mid point between the aarambh and viram sandhi is mid cusp (MC) or bhava madhya of that bhava. Planets posited near the longitude of bhava madhya are generally stronger. At the aarambh sandhi, planets have no strength and hence get 0 rupa strength. The strength increases as it moves towards the mid cusp and attains a strength of 1 rupa or 60 shashtiamsha at mid cusp. Between mid cusp and viram sandhi the strength decreases and is 0 again at viram sandhi. The first part of a bhava from aarambh sandhi to mid cusp is called purva bhag and the second half from mid cusp to viram sandhi is called uttara bhag.

Planet in purva bhag

Arc of residential strength : Longitude of planet minus longitude of aarambh sandhi

$$\text{Residential strength} : \frac{\text{Arc of residential strength}}{\text{Length of purva bhag}}$$

Planet in uttara bhag

Arc of residential strength : Longitude of viram sandhi minus longitude of planet

$$\text{Residential strength} : \frac{\text{Arc of residential strength}}{\text{Length of uttara bhag}}$$

Let us take an example chart and work out the residential strength of planets for this native.

Example horoscope (Female)

Date of birth 8-4-1967, Saturday, Krishna chaturdashi.
Time of birth 2:45 A.M.
Place of birth Jabalpur, Madhya Pradesh, India.

Planetary position

Lagna	9^s	21°	04'
Sun	11^s	23°	57'
Moon	11^s	01°	49'
Mars (R)	6^s	04°	04'
Mercury	10^s	27°	18'
Jupiter	3^s	01°	31'
Venus	0^s	28°	50'
Saturn	11^s	10°	56'
Rahu	0^s	13°	39'
Ketu	6^s	13°	39'

Find out the longitude of 10th cusp, 7th cusp and 4th cusp from the sidereal time of birth.

Longitudes of bhav sandhis and bhav madhyas

C = Cusp, S = Sandhi

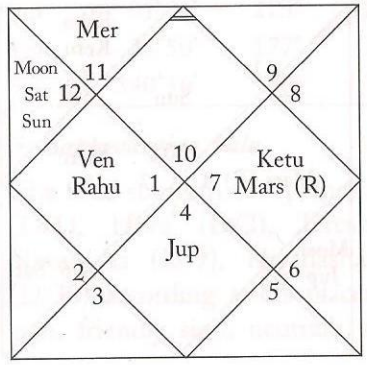
I C	–	9^s 21° 04'	I/II S	–	10^s 08°04'
II C	–	10^s 25° 04'	II/III S	–	11^s 12°04'
III C	–	11^s 29° 04'	III/IV S	–	0^s 16°04'
IV C	–	1^s 03° 04'	IV/V S	–	1^s 16°04'
V C	–	1^s 29° 04'	V/VI S	–	2^s 12°04'
VI C	–	2^s 25° 04'	VI/VII S	–	3^s 08°04'
VII C	–	3^s 21° 04'	VII/VIII S	–	4^s 08°04'
VIII C	–	4^s 25° 04'	VIII/IX S	–	5^s 12°04'
IX C	–	5^s 29° 04'	IX/X S	–	6^s 16°04'
X C	–	7^s 03° 04'	X/XI S	–	7^s 16°04'
XI C	–	7^s 29° 04'	XI/XII S	–	8^s 12°04'
XII C	–	8^s 25° 04'	XII/I S	–	9^s 08°04'

Residential strength or awasiya bala - Table I

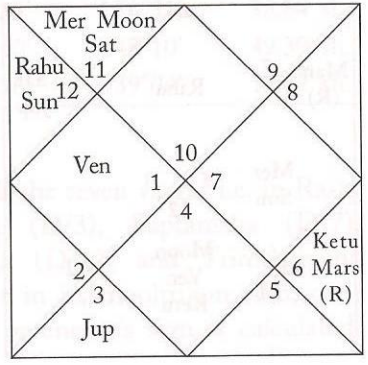
Planet	*Bhava*	*P/U Bhag*	*Long. of Planet*	*Long. of A.S./V.S.*	*Arc of Res. Str.*	*Length of PB/UB*	*Res. Strength*	*Units of Res. Str.*
1	2	3	4	5	6(4-5)	7	8(6/7)	9
Sun	III	P	11^{s}23°57'	11^{s}12°04'	11°53'	17°0'	11°53' / 17°	0.699 Rupa 41.94 Sh.
Moon	II	U	11^{s}1°49'	11^{s}12°04'	10°15'	17°0'	10°15' / 17°	0.603 Rupa 36.17 Sh.
Mars	IX	U	6^{s}4°04'	6^{s}16°04'	12°0'	17°0'	12°0' / 17°	0.706 Rupa 42.35 Sh.
Mer	II	U	10^{s}27°18'	11^{s}12°04	14°46'	17°0'	14°46' / 17°	0.868 Rupa 52.11 Sh.
Jup	VI	U	3^{s}1°31'	3^{s}08°04'	06°33'	13°0'	6°33' / 13°	0.504 Rupa 30.23 Sh.
Ven	IV	P	0^{s}28°50	0^{s}16°04'	12°46'	13°0'	12°46' / 13°	0.982 Rupa 58.92 Sh.
Sat	II	U	11^{s}10°56	11^{s}12°04'	01° 08'	17°0'	1°08' / 17°	0.066 Rupa 3.999 Sh.
Rahu	III	U	0^{s}13°39'	0^{s}16°04'	02°25'	17°0'	2°25' / 17°	0.142 Rupa 8.52 Sh.
Ketu	IX	U	6^{s}13°39'	6^{s}16°04'	02°25	17°0'	2°25' / 17°	0.142 Rupa 8.52 Sh.

Saptavargas and Bhava Chart

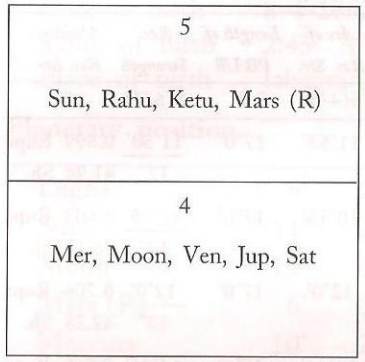
Rashi



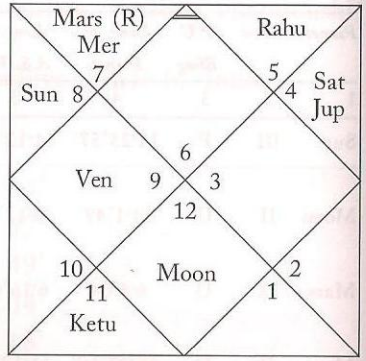
Bhava



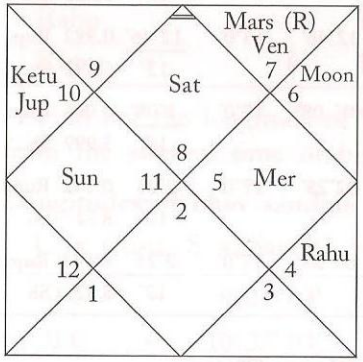
Hora



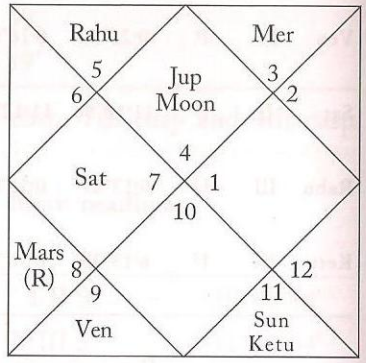
Dreshkon



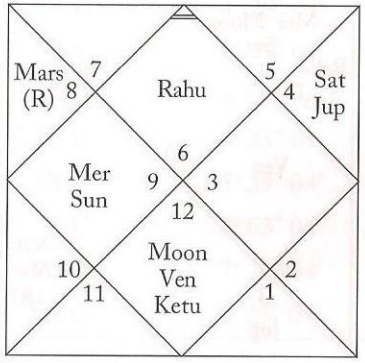
Saptamsha



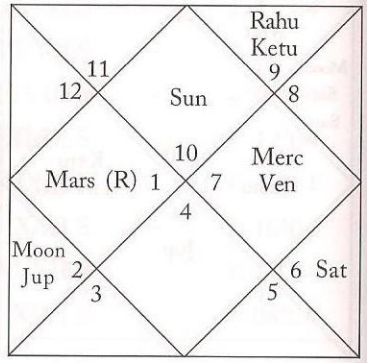
Navamsha



Dwadashamsha



Trimshamsha



1. Sthana bala or Positional strength

Sthana bala or positional strength of a planet is the sum total of five types of strength, namely:

(i) Oocha bala (ii) Saptavargiya bala (iii) Oja-Yugma bala - odd/even rashi bala (iv) Kendradi bala and (v) Dreshkon bala.

i. Oocha bala

The strength attained by a planet due to its placement between exaltation and debilitation points is called oocha bala. A planet at exaltation gets a full strength of 1 rupa and at debilitation point is devoid of strength and gets 0 rupa. A planet moving towards exaltation point is called aarohi and that moving towards its debilitation point is called avarohi.

To determine the oocha bala of a planet, the difference between its longitude and its deep debilitation point is taken. If this difference is more that 180°, then deduct the same from 360° to get the net difference. When the net difference is divided by three we get the oocha bala in shashtiamsha. Table II illustrates our example.

Oocha Bala - Table II

Planet	*Long. of Planet*	*Long. of Debl. Pt.*	*Diff.*	*Net Diff.*	*Oocha Bala*
Sun	353°57'	190°	163°57'	163°57'	54.65 sh.
Moon	331°49'	213°	118°49'	118°49'	39.60 sh.
Mars	184°04'	118°	66°04'	66°04'	22.02 sh.
Mer	327°18'	345°	17°40'	17°40'	5.90 sh.
Jup	91°31'	275°	183°29'	176°31'	58.84 sh.
Ven	28°50'	177°	148°10'	148°10'	49.39 sh.
Sat	340°56'	20°	320°56'	39°04'	13.02 sh.

ii. Saptavargiya bala

The total strength of a planet in all the seven vargas i.e. in Rashi (D/1), Hora (D/2), Dreshkon (D/3), Saptamsha (D/7), Navamsha (D/9), Dwadashamsha (D/12) and Trimshamsha (D/30) according to its placement in its mooltrikon sign, own sign, friendly sign, neutral's sign or enemy's sign is calculated.

The natural relationship between the planets is given in Table III. Apart from this relationship, there also exists a temporary relationship between planets in every individual horoscope. Planets which are posited 3 houses ahead or 3 houses behind any planet are its temporary friends and the rest are enemies. The temporary relationship between planets in our example horoscope are given in table IV.

Natural relationship - Table III

Planet	*Friend*	*Neutral*	*Enemy*
Sun	Moon, Mars, Jup	Mer	Sat, Ven
Moon	Sun, Mer	Mars, Jup, Ven, Sat	-
Mars	Sun, Moon, Jup	Sat, Ven	Mer
Mer	Ven, Sun	Mars, Jup, Sat	Moon
Jup	Sun, Moon, Mars	Sat	Ven, Mer
Ven	Mer, Sat	Mars, Jup	Sun, Moon
Sat	Ven, Mer	Jup	Sun, Moon, Mars

Temporary relationship - Table IV

Planet	*Friend*	*Enemy*
Sun	Ven, Mer	Sat, Moon, Mars, Jup
Moon	Ven, Mer	Sun, Sat, Mars, Jup
Mars	Jup	Sun, Moon, Sat, Ven, Mer
Mer	Moon, Sat, Sun, Ven	Mars, Jup
Jup	Ven, Mars	Sun, Sat, Mer, Moon
Ven	Moon, Sat, Sun, Mer, Jup	Mars
Sat	Ven, Mer	Sun, Moon, Jup, Mars

With the help of these two tables of natural and temporary relationships, a panchadha maitri table is prepared.

Temporary friend + Natural friend = Adhi mitra (Very Friendly)
Temporary friend + Neutral = Mitra (Friendly)
Temporary friend + Natural enemy = Sama (Neutral)
Temporary enemy + Natural friend = Sama (Neutral)
Temporary enemy + Neutral = Shatru (Enemy)
Temporary enemy + Natural enemy = Adhi shatru (Extreme Enemy)

On the basis of this panchadha maitri chart, the strength of planets in all the 7 vargas is evaluated.

Unit of strength

A planet in its mooltrikon rashi (only in D/1)	45.00	sh.
In own varga	30.00	sh.
In adhi mitra varga	22.50	sh.
In mitra varga	15.00	sh.
In neutral varga	7.50	sh.
In shatru varga	3.75	sh.
In adhi shatru varga	1.875	sh.

Panchadha maitri chart of planets - Table V

Planet	*Adhi mitra*	*Mitra*	*Neutral*	*Shatru*	*Adhi shatru*
Sun	—	Mer	Moon, Mars Jup, Ven	—	Sat
Moon	Mer	Ven	Sun	Jup, Sat, Mars	—
Mars	Jup	—	Sun, Moon	Sat, Ven	Mer
Mer	Ven, Sun	Sat	Moon	Mars, Jup	—
Jup	Mars	—	Ven, Moon, Sun	Sat	Mer
Ven	Mer, Sat	Jup	Sun, Moon	Mars	—
Sat	Mer, Ven	—	—	Jup	Sun, Moon, Mars

Saptavargiya bala of planets - Table VI

Planet	*D/1*	*D/2*	*D/3*	*D/7*	*D/9*	*D/12*	*D/30*	*Total Sh.*
Sun	7.5	30.0	7.5	1.875	1.875	7.5	1.875	58.125
Moon	3.75	30.0	3.75	22.50	30.0	3.75	15.0	108.75
Mars	3.75	7.5	3.75	3.75	30.0	30.0	30.0	108.75
Mer	15.0	7.5	22.50	22.50	30.0	3.75	22.5	123.75
Jup	7.5	7.5	7.5	3.75	7.5	7.5	7.5	48.75
Ven	3.75	7.5	15.0	30.0	15.0	15.0	30.0	116.25
Sat	3.75	1.875	1.875	1.875	22.5	1.875	22.5	56.25

iii. Oja-Yugma rashi bala

This is the strength which a planet gets because of its placement in odd or even sign in rashi and navamsha charts. Moon and

Venus are considered as female planets whereas the rest are male planets.

In Rashi chart	Male planets in odd rashi	- 15 sh.
	Female planets in even rashi	- 15 sh.
In Navamsha	Male planets in odd rashi	- 15 sh.
	Female planets in even rashi	- 15 sh.

Male planets in a female rashi (even rashis) and female planets in male rashi (odd rashis) in D/1 or D/9 get no strength or 0 shashtiamsha bala.

A total of the above in rashi and navamsha gives the Oja-Yugma rashi-amsha bala of a planet.

iv. Kendradi bala or quadrant strength

Planets in kendra	(1, 4, 7, 10) houses	- 60 sh.
Planets in panfara	(2, 5, 8, 11) houses	- 30 sh.
Planets in apoklima	(3, 6, 9, 12) houses	- 15 sh.

v. Dreshkon bala

Sun, Mars and Jupiter are male planets. Moon and Venus are females, Mercury and Saturn are eunuchs or neutral.

Male planets in 1st dreshkon	(0 - 10°)	- 15 sh.
Female planets in 3rd dreshkon	(20 - 30°)	- 15 sh.
Neutral planets in 2nd dreshkon	(10 - 20°)	- 15 sh.

Oja-Yugma bala, Kendradi bala and Dreshkon bala
Table VII

Planet	*D/1*	*D/9*	*Total*	*Kendradi*	*Dreshkon*
Sun	0	15	15	15	-
Moon	15	15	30	15	-
Mars	15	-	15	60	15
Mer	15	15	30	30	-
Jup	-	-	-	60	15
Ven	-	-	-	60	15
Sat	-	15	15	15	15

Table VIII on the next page gives the sthana bala of the planets in the example chart.

Sthana bala - Table VIII

Planet	*Oocha Bala*	*Sapta-Vargiya Bala*	*Oja-Yugma Bala*	*Kendradi Bala*	*Dreshkon Bala*	*Total Bala Sh.*
Sun	54.65	58.125	15	15	-	142.775
Moon	39.60	108.75	30	15	-	193.35
Mars	22.02	108.75	15	60	15	220.77
Mer	5.90	123.75	30	30	-	189.65
Jup	58.84	48.75	–	60	15	182.59
Ven	49.39	116.25	–	60	15	240.64
Sat	13.02	56.25	15	15	15	114.27

2. Dig bala - Directional strength

Dig, means direction and the strength of a planet taking into account the relationship of its occupancy and direction is called dig bala. Jupiter and Mercury are powerful in the east or ascendant and get full strength when they occupy the ascendant. Saturn in the west (7th cusp/7th bhava), Moon and Venus in the north (4th cusp/4th bhava) and Sun and Mars in the south (10th cusp/10th bhava) get directional strength. In these directions a planet gets strong, otherwise the strength diminishes in proportion.

Jupiter and Mercury coinciding with the longitude of the ascendant get 1 rupa or 60 shashtiamsha bala. Moon and Venus coinciding with the 4th cusp or bhava madhya get 1 rupa strength. Saturn coinciding with the 7th cusp and Sun and Mars coinciding with the 10th cusp get 1 rupa. When a planet is situated at 180° opposite to this point, it gets 0 rupa bala.

For calculating digbala of Jupiter and Mercury, subtract the longitude of the 7th cusp from the longitude of planet. In other words to find the dig bala of any planet, subtract the longitude of the weakest point (180° away from the powerful point) from the longitude of the planet. If the difference is more that 180° then subtract this from 360°. This gives the length of the digbala arc. Dividing the arc of dig bala by 3, we get the dig bala of the planet. (Table IX).

Dig bala of planets - Table IX

Planet	*Long. of Planet*	*Long. of Powerless point*	*Arc of Dig bala*	*Corr. Arc*	*Dig bala Arc÷3*
Sun	353°57'	33°04'	320°53'	39°07'	13.04
Moon	331°49'	213°04'	118°45'	118°45'	39.58
Mars	184°04'	33°04'	151°00'	151°00'	50.03
Mer	327°18'	111°04'	216°14'	143°46'	47.92
Jup	91°31'	111°04'	19°33'	19°33'	6.52
Ven	28°50'	213°04'	184°14'	175°46'	58.59
Sat	340°56'	291°04'	49°52'	49°52'	16.62

3. Kaala bala or Temporal strength

The strength acquired from time is known as kaala bala. It is of nine types.

i. Nat-unnat bala (Diva-ratri bala)
ii. Paksha bala (Shukla or krishna paksha)
iii. Tribhag bala (3 divisions of day or night)
iv. Abdha bala or varshadhipati bala (Year lord)
v. Masadhipati bala (Month lord)
vi. Varadhipati bala (Day lord)
vii. Hora bala
viii. Ayana bala (Uttarayana or dakshinayana)
ix. Yudha bala

i. Nat-unnat bala

This is the strength which a planet gets due to birth during the day or during the night. Planets which are strong at mid day have unnat bala and those which are strong at mid night have nat bala. Moon, Saturn and Mars are powerful during midnight and powerless at mid day. Sun, Jupiter and Venus are powerful during mid day and poweless at midnight. Mid day of any place is the local noon when Sun passes over its meridian. Dinardh gives nat kaala. Nat kaala when converted into degrees gives nat bala. When nat bala is deducted from 60 sh. We get unnat bala.

Method of calculation of nat-unnat bala

In the example horoscope :

Sunset on 7-4-1967 — 18 : 38
Sunrise on 8-4-1967 — 6 : 06
Ratrimaan (24 + 6:06) - 18 : 38 — 11 : 28
Half of ratrimaan $\frac{11 : 28}{2}$ — 5 : 44

Adding half of ratrimaan to sunset time on 7-4-1967
18 : 38 + 5 : 44 — 24 : 22 or 00 : 22
Time of birth — 2 : 45
Difference between TOB and ratriyardh
2 : 45 - 0 : 22 — 2 : 23

To convert time into degrees we multiply by 15 and to determine Nat-unnat bala we divide this by 3.

$\frac{2 : 23 \times 15}{3}$ — 11.92

Since it is a night birth Venus, Jupiter and Sun get unnat bala of 11.92 shashtiamsha.

Moon Mars and Saturn will get nat bala of 60 - 11.92 = 48.08 shashtiamsha.

Mercury is always powerful and gets 60 shashtiamsha.

ii. Paksha bala

Strength of planets according to paksha of Moon is calculated. During shukla paksha Moon increases in strength and also increases the strength of benefic planets. Malefic planets get zero strength. During krishna paksha, the strength of malefics become full and benefics loose strength. Determination of benefics and malefics may be done as per Parashari principles.

The difference between the longitude of Moon and Sun is taken. If the difference is more than 180° then deduct it from 360°. This difference when divided by 3 gives paksha bala.

Calculation of paksha bala

Difference between the longitude of Moon and Sun
353°57' - 331°49' = 22°08'
This difference when divided by 3 gives paksha bala.
$\frac{22°08'}{3}$ = 7.37 sh.

Since the birth was on krishna chaturdashi, benefics (Jupiter, Venus and Mercury) get 7.37 sh. bala and malefics (Mars, Sun and Saturn) get 60 - 7.37 = 52.63 sh. bala. Moon's paksha bala is always doubled i.e. 7.37 × 2 = 14.74 sh.

iii. Tribhag bala

Day time from (sunrise to sunset) and night time (from sunset to sunrise) is divided into three parts each. The lord of the first part is Mercury, second part is Sun and third part is Saturn. During the night time the lord of the first part is Moon, second part is Venus and third part is Mars. Jupiter is always powerful. According to the birth time the lord of the division during day or night gets 60 sh. bala and the remaining planets get 0 sh.

To find tribhag bala, divide the dinmaan or ratrimaan by 3. The lord of that part gets 60 sh. Bala.

Calculation of tribhag bala

Sunset on 7-4-1967	18 : 38
Sunrise on 8-4-1967	6 : 06
Ratrimaan (24 + 6:06) - 18 : 38	11 : 28

Since it is a night birth, divide ratrimaan by 3

$$\frac{11 : 28}{3} = 3\text{h. } 49\text{m. } 20\text{s.}$$

Since birth time falls in the 3rd part of ratrimaan in the example chart, Mars is the lord and it gets 60 sh. bala. Since Jupiter is always powerful, it gets 60 sh. bala. The remaining planets get 0 sh. bala.

iv. Varshadhipati or abdhapati bala

Abdha means year and lord who presides over the year of birth of a native will be the planet that rules over the weekday on which the birth year begins. In order to determine the abdhapati, the number of days passed since creation is taken. This is called shrishtiadi ahargana. The epoch date selected for formation of this table is 2nd May 1827 (Wednesday). The counting of days is considered to have begun on this day. For the sake of ease of calculation, a condensed table of ahargana is given giving the accumulated number of days upto 31st December of each year.

Ahargana - Table X

31 Dec.	*Ahargana*	*31 Dec.*	*Ahargana*	*31 Dec.*	*Ahargana*	*31 Dec.*	*Ahargana*
1827	244	1858	11567	1889	22890	1920*	34212
1828 *	610	1859	11932	1890	23255	1921	34577
1829	975	1860*	12298	1891	23620	1922	34942
1830	1340	1861	12663	1892*	23986	1923	35307
1831	1705	1862	13028	1893	24351	1924*	35673
1832*	2071	1863	13393	1894	2471	1925	36038
1833	2436	1864*	13759	1895	25081	1926	36403
1834	2801	1865	14124	1896*	25447	1927	36768
1835	3166	1866	14489	1897	25812	1928*	37134
1836*	3552	1867	14854	1898	26177	1929	37499
1837	3897	1868*	15220	1899	26542	1930	37864
1838	4262	1869	15585	1900 †	26907	1931	37864
1839	4627	1870	15950	1901	27272	1932*	38595
1840*	4993	1871	16315	1902	27637	1933	38960
1841	5358	1872*	16681	1903	28002	1934	39325
1842	5723	1873	17046	1904*	28368	1935	39690
1843	6088	1874	17411	1905	23733	1936*	40056
1844*	6454	1875	17776	1906	29098	1937	40421
1845	6819	1876*	18142	1907	29463	1938	40786
1846	7884	1877	18007	1908*	29829	1939	41151
1847	7549	1878	18872	1909	30194	1940*	41517
1848*	7915	1879	19237	1910	30559	1941	41882
1849	8280	1880*	196063	1911	30924	1942	42247
1850	8645	1881	19968	1912*	13290	1943	42612
1851	9010	1882	20333	1913	31655	1944*	42978
1852*	9376	1883	20698	1914	32020	1945	43343
1853	9741	1884*	21064	1915	32385	1946	43708
1854	10106	1885	21429	1916*	32751	1947	44073
1855	10471	1886	21794	1917	33116	1948*	44439
1856*	108637	1887	22159	1918	33481	1949	44804
1857	11202	1888*	22525	1919	33846	1950	45169

31 Dec.	*Ahargana*	*31 Dec.*	*Ahargana*	*31 Dec.*	*Ahargana*	*31 Dec.*	*Ahargana*
1951	45534	1968*	51744	1985	57953	2002	64162
1952*	45900	1969	52109	1986	58318	2003	64527
1953	46265	1970	52474	1987	58683	2004*	64893
1954	46630	1971	52839	1988*	59049	2005	65258
1955	46995	1972*	53205	1989	59414	2006	65623
1956*	47361	1973	53570	1990	59779	2007	65988
1957	47726	1974	53935	1991	60144	2008*	66354
1958	48091	1975	54300	1992*	60510	2009	66719
1959	48456	1976*	54666	1993	60875	2010	67084
1960*	48822	1977	55031	1994	61240	2011	67449
1961	49187	1978	55396	1995	61605	2012*	67815
1962	49552	1979	55761	1996*	61971	2013	68180
1963	49917	1980*	56127	1997	62336	2014	68545
1964*	50283	1981	56492	1998	62701	2015	68910
1965	50648	1982	56857	1999	63066	2016*	69276
1966	51013	1983	57222	2000*	63432	2017	69641
1967	51378	1984*	57588	2001	63797	2018	70006

* Leap year † 1900 is not a leap year

Accumulated days from 1st January

January	31	July	212
February	59	August	243
March	90	September	273
April	120	October	304
May	151	November	334
June	181	December	365

Calculation of Abdhadhipati

Date of birth 8-4-1967

Ahargana upto December 1966	=	51013
No. of days in Jan, Feb, Mar 1967	=	90
No. of days upto 8th April	=	8
		51111

Dividing by 360, $\frac{51111}{360}$ = Q - 141

Multiply the quotient by 3 and add 1 = 141 × 3 + 1 = 424

Divide by 7, $\frac{424}{7}$ = Q 60, Rem. 4

Fourth day from Wednesday is Saturday and lord of the year becomes Saturn. Saturn get 15 sh. bala whereas the remaining planets get 0 sh.

v. Masadhipati bala

The planet that rules the first weekday of the month of birth is the masadhipati. The lord gets 30 sh. bala.

Divide the condensed ahargana by 30

$\frac{51111}{30}$ = Q 1703, Rem. 21

Multiply the quotient by 2 and add 1

1703 x 2 + 1 = 3407

Divide by 7, the rem. counted from Wed. gives the day

No. of days from Wednesday 3407 ÷ 7 = rem. 5

5th day from Wednesday is Sunday.

Masadhipati is Sun which gets 30 sh. bala.

vi. Varadhipati bala

Lord of the day of birth is varadhipati. Divide the condensed ahargana by 7. The remainder when counted from Wednesday gives the day.

In the present case $\frac{51111}{7}$ = Q 7301, Rem. 4

Counting 4 from Wednesday we get Saturday as the day of birth and Saturn gets 45 sh. bala.

vii. Horadhipati bala

Each day from sunrise to sunset is divided into 12 horas and from sunset to the next sunrise again into 12 horas. Each hora of the day and night has a lord who is called horadhipati. During the day time, the first hora starts with the lord of the weekday. And the next hora will be the lord of the 6th day. At night, after sunset, the first hora will be the 5th from the day lord followed by the same order i.e. the lord of the 6th day from the first hora after sunset. It can be understood in another simpler

Day Hora chart - Table XI

Day \ Hora	1	2	3	4	5	6	7	8	9	10	11	12
Sun	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat
Mon	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun
Tue	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon
Wed	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars
Thu	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer
Fri	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup
Sat	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven

Day Hora chart - Table XII

Night \ Hora	1	2	3	4	5	6	7	8	9	10	11	12
Sun	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer
Mon	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup
Tue	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven
Wed	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat
Thu	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun
Fri	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon
Sat	Mer	Mon	Sat	Jup	Mars	Sun	Ven	Mer	Mon	Sat	Jup	Mars

way. Each hora is followed by the lord of the weekday in the reverse order, skipping one at a time. For example on a Sunday, the first hora is of Sun, the next hora will be of Venus. Counting from Sun in the reverse order and skipping one, we get Venus, followed by Mercury and so on.

In the present case

Sunrise	6 : 06 Hrs.
Sunset	18 : 38 Hrs.
Dinmaan	12 : 32 Hrs.
Ratrimaan	11 : 28 Hrs.

Difference between Sunset and time of birth
26 : 45 - 18 : 38 = 8 : 07 Hrs.

Duration of each hora during night $\frac{11 : 28}{12}$ = 57 m. 20 s.

Divide 8 : 07 Hrs. by duration of each hora of = 57'20"

Hence 9th hora is running during night which started on Friday i.e. 7-4-1967 which is the hora of Sun.

Sun gets 60 sh. bala and the remaining planets get 0 sh.

For the purpose of ready reference the table of horas during day time and night time for all days of the week is given here.

viii. Ayana bala

Each planet is situated towards the north or south of the celestial equator and attains strength due to its placement there. This strength is called ayana bala. The angular distance of the planet from the celestial equator is called the declination of the planet and is plus or minus based on whether the planet is situated in the northern or southern hemisphere.

The north declination is 0° at the first point of Aries (sayana) and increases to a maximum of 23°26' or nearly 24° at the first point of Cancer which is at 90° from the beginning of the movable zodiac. The declination falls gradually to 0° till it reaches the first point of Libra which is 180° from the beginning of the zodiac and is exactly opposite to Aries. From here the southern movement of the planet starts and the planet will have south declination. Here also the declination increases gradually till it reaches about 24° at the last point of Sagittarius or 270° from the first point of sayana Aries. During the movement from

this point upto the first point of Aries its declination once again decreases gradually till it becomes 0° when it enters Aries.

Determination of Declination (Kranti)

Sun, Mars, Venus and Jupiter get the maximum strength of 60 shashtiamsha or 1 rupa when their declination is maximum in the northern hemisphere. In the southern hemisphere Moon and Saturn get 60 shashtiamsha bala when there declination is maximum. Mercury is powerful in both the hemispheres and get 60 shashtiamsha bala. At the equator all planets get 30 shashtiamsha bala.

For easy calculation of declination, we divide the longitude of 90° into 6 parts of 0-15°, 15°-30°, 30°-45°, 45°-60°, 60°-75°, 75°-90°. Since the Earth is not a perfect sphere the declination is not same in all the 6 parts. Hence the value of all these parts have been calculated and is as follows :

Part	*Degrees*	*Value of the part*	*Value upto the part*
I	0-15°	362'	362'
II	15°-30°	341'	703'
III	30°-45°	299'	1002'
IV	45°-60°	236'	1238'
V	60°-75°	150'	1388'
VI	75°-90°	52'	1440'

Calculation of ayana bala

1. Convert nirayana longitude into sayana longitude by adding the ayanamsha for that year.
2. Find out the bhuja of the planet. Bhuja is the longitudinal distance of a planet to the nearest equinoctial point. The difference between the longitude of the nearest equinoctial point and the sayana longitude is called bhuja.
3. To find the declination, using the bhuja obtained, we will have to find out in which part the planet is posited. The formula is :

$$\text{Value of the parts already covered} + \frac{\text{Bhuja} \times \text{value of the part}}{15^\circ \text{ (Long. of each part)}}$$

4. Find out whether the planet is placed in the northern or southern hemisphere. A planet has north declination if its sayana longitude is 0° to 180° and has south declination if its sayana longitude is between 180° to 360°. At the celestial equator all planets get 30 shashtiamsha bala. Planets which are powerful in the northern hemisphere (Sun, Mars, Venus and Jupiter) if placed in the southern hemisphere (180° to 360°) lose strength and planets which are powerful in the southern hemisphere (Moon and Saturn) if placed in the northern hemisphere (0° to 180°) loose strength.

In case of Sun, Mars, Venus and Jupiter, their northern declination is additive and southern declination is subtractive. In case of Moon and Saturn, the southern declination is additive and northern declination is subtractive. Mercury is always additive in both the hemispheres.

At 0° and 180° longitude (the celestial equator) the declination is 0° and ayana bala is 30 sh. At 90° longitude in northern hemisphere and at 270° longitude in southern hemisphere the maximum declination is 24° and ayana bala is 60 sh. Ayana bala is obtained by the following formula.

$$\frac{24^\circ \pm \text{Declination}}{48} \times 60 = \text{Units (sh.)}$$

Ayana bala - Table XIII

Planet	*Nir. Long.*	*Ayanamsha*	*Syn. Long.*	*Nearest Equ. Pt.*	*Bhuja*	*Northern/ Southern Hemisphere*
Sun	353°57'	23°24'	377°21'	360°	17°21'	N*
Moon	331°49'	23°24'	355°13'	360°	4°47'	S
Mars	184°04'	23°24'	207°28'	180°	27°28'	S
Mer	327°18'	23°24'	350°42'	360°	9°18'	S
Jup	91°31'	23°24'	114°55'	180°	65°05'	N
Ven	28°50'	23°24'	52°14'	360°	52°14' @	N
Sat	340°56'	23°24'	364°20'	360°	4°20'	N

* Since the planet has crossed into sayana Aries, it is in the northern hemisphere.

@ The difference is the same since 360° long. is 0° sayana Aries.

Declination of Planets - Table XIV

Planet	*Part*	*Calculation*	*Declination*
Sun	2	$362' + \frac{2°21' \times 341'}{15°}$	= 415.423' or 6°55' (+)
Moon	1	$\frac{4°47' \times 362'}{15°}$	= 115.437' or 1°55' (+)
Mars	2	$362' + \frac{12°28' \times 341'}{15°}$	= 645.408' or 10°45' (-)
Mer	1	$\frac{9°18' \times 362'}{15°}$	= 244.44' or 3°44' (+)
Jup	5	$1238' + \frac{5°05' \times 150'}{15°}$	= 1288.833' or 21°29' (+)
Ven	4	$1002' + \frac{7°14' \times 236'}{15°}$	= 1115.804' or 18°36' (+)
Sat	1	$\frac{4°20' \times 362'}{15°}$	= 104.577' or 1°44' (-)

Calculation of ayana bala

Sun	$\frac{24° + 6°55'}{48}$	x 60 = 38.64 x 2	= 77.28 Sh.
	(Ayana bala for Sun is doubled)		
Moon	$\frac{24° + 1°55'}{48}$	x 60 =	32.39 Sh.
Mars	$\frac{24° - 10°45'}{48}$	x 60 =	16.56 Sh.
Mer	$\frac{24° + 3°44'}{48}$	x 60 =	34.67 Sh.
Jup	$\frac{24° + 21°29'}{48}$	x 60 =	56.85 Sh.
Ven	$\frac{24° + 18°36'}{48}$	x 60 =	53.25 Sh.
Sat	$\frac{24° - 1°44'}{48}$	x 60 =	27.83 Sh.

ix. Yudha bala

Two planets are said to be in yudha or planetary war when they are in conjunction and the distance between them is less than 1°. Planets except Sun and Moon may enter into yudha. The conquering planet is the one with lesser longitudinal degrees. The bimba parimaan or the diameter of the discs of planets are given below :

Mars	-	9.4" of the arc
Mercury	-	6.6" of the arc
Jupiter	-	190.4" of the arc
Venus	-	16.6" of the arc
Saturn	-	158.0" of the arc

Calculation of Yudha bala

Find out the total of various kaala balas i.e. sthana bala, dik bala and kaala bala (upto hora bala) of the planets in war. Find out the difference between the two totals. Divide this by the difference between the diameters of the disks of the planets involved in war. The resulting quotient will give the yudha bala of the winning planet and should be added to the kaala bala of the planet. In case three or more planets enter into war, then yudha bala of of the planets in respect of the one with the lowest degrees is to be found out separately.

Since there are no planets in yudha in the example horoscope, this need not be calculated.

Total Kala bala - Table XV

Planet	*Sun*	*Moon*	*Mars*	*Mer*	*Jup*	*Ven*	*Sat*
Nat-Unnatabala	11.92	48.08	48.08	60.00	11.92	11.92	48.08
Pakshabala	52.63	14.74	52.63	7.37	7.37	7.37	52.63
Tribhagabala	-	-	60.00	-	60.00	-	-
Abdhabala	-	-	-	-	-	-	15.00
Masabala	30.00	-	-	-	-	-	-
Varabala	-	-	-	-	-	-	45.00
Horabala	60.00	-	-	-	-	-	-
Ayanabala	77.28	32.39	16.56	34.67	56.85	53.25	27.83
Yudhabala	-	-	-	-	-	-	-
Total	231.83	95.21	177.27	102.04	136.14	72.54	188.54

CHAPTER XVII

GRAHA BALA - II

"The gift which is given with a view to receive in return, or looking for the fruit, or again grudgingly, is accounted as rajasik. It causes discomfort both to the giver and the receiver."

- Bhagwad Gita XVII. 21

4. Chesta bala - Motional strength

Strength attained by a planet due to its motion around the Sun is called Chesta bala. Although planets move in the same direction around the Sun, the apparent motion as seen from the Earth is not always in the same forward direction. They sometime appear to move in the backward direction also. This is known as retrograde motion of a planet.

Chesta kendra

Arc of retrogression is called chesta kendra and is calculated by applying the formula:

$$\text{Chesta kendra} = \text{Sheegrochha} - \frac{(\text{Mean long.} + \text{True long.})}{2}$$

$$\text{Chesta bala} = \frac{\text{Chesta kendra}}{3}$$

When chesta kendra is 0, chesta bala is also 0.
When chesta kendra is 180° chesta bala is 60 sh.
When chesta kendra is 1°, chesta bala is 60 ÷ 180 or 1 ÷ 3.
When chesta kendra is x° chesta bala = C. K. ÷ 3.

Mean longitude

It is the relative distance of a planet from Sun. Planets move in an elliptical path. The mean position of a planet, assuming that

it is orbiting in a circular path at a uniform rate of motion is its mean longitude. Since the orbit is not perfectly circular, but elliptical, equations are applied to the mean position to get the true position of longitude.

To determine chesta kendra, an epoch was chosen and is taken to be 1st January, 1900 at Midnight on 76° E longitude (which is at Ujjain and had been adopted by Hindu astronomers as the meridian for India). We now find out the time interval from this epoch day to the date of birth of the native.

Calculation of time interval (No. of days) from epoch

DOB : 8.4.1967 TOB: 2.45AM
POB : Jabalpur 79°57'E

From 1.1.1900 to 8.4.1967 it is 67 yrs. 3 months and 7 days and upto 2.45 AM on 8th April.

Converting it into days

67 x 365	=	24455
16 leap yrs.	=	16
3 months	=	90
7 days in April	=	7
Total	=	24568
Longitude of Jabalpur	=	79°57'E
Long. Of Ujjain	=	76° E
Difference	=	3°57'

Converting 3°57' into minutes (1°=4') it comes to 15m. 48sec.

Hence this is the time correction to be applied to the birth time of the native. Taking the longitude of Ujjain as reference point, the time correction is +ve or -ve.

TOB - LMT Corr. or 2:45:00 - 00:10:12=	2:34:48
Local TOB at Jabalpur with reference to Ujjain is	2:34:48
(-) Time Difference	15:48
	2:19:00

As 24 hours = 1 day, 2:19 hours is roughly equal to 0.10 days

Therefore, number of days to be added to the total number of days from the epoch is 0.10 days.

Total time interval in days = 24568.10 days

Tables i to iv gives the mean motion of Sun, Mars Jupiter and Saturn.

Calculation of Mean Position of Sun from Table (i)

For	20000	days	-	272.0531°
For	4000	days	-	342.4106°
For	500	days	-	132.8013°
For	60	days	-	59.1361°
For	8	days	-	7.8848°
For	0.10	days	-	.0985°
				814.3844° (A)

Mean position of Sun on 1-1-1900 = 257.4568° (B)
Mean postion on 8-4-67 (A+B) =1071.8412°

Expunging the multiples of 360° the mean position of Sun at birth is 351.8412°

Mean position of Venus and Mercury are the same as that of Sun as they are always close to Sun i.e. 351.8412°

Calculation of mean position of Mars from Table (ii)

For	20000	days	-	40.39°
For	4000	days	-	296.08°
For	500	days	-	262.01°
For	60	days	-	31.44°
For	8	days	-	4.192°
For	0.10	days	-	0.052°
				634.164° (A)

Mean position of Mars on 1-1-1900 = 270.22° (B)
Mean postion on 8-4-67 (A+B) = 904.382°

Expunging the multiples of 360° the mean position of Mars at Birth is 184.382°

Calculation of mean position of Jupiter from Table (iii)

Total No. of days - 24568.10 Deduct a factor 3.33°+0.0067t where t is number of years passed after the epoch.

In the present case it is 3.33 + 0.0067 × 67 = 3.7789

For	20000	days	-	221.96°
For	4000	days	-	332.39°
For	500	days	-	41.55°
For	60	days	-	4.99°
For	8	days	-	0.66°
For	0.10	days	-	0.008°
				601.558° (A)

Mean position of Jupiter on 1-1-1900 = 220.04° (B)
Mean postion on 8-4-67 (A+B) = 821.498°
Corr. factor (-) 3.7789
817.8191°

Expunging the multiples of 360° the mean position of Jupiter at birth is 97.8191°

Calculation of mean position of Saturn from Table (iv)

Total No. of days - 24568.10 Add a factor 5° + 0.001t, where it is the No. of years after the epoch.

In the present case it is, 5°+ 0.001 x 67 = 5.067°.

For	20000	days	-	308.79°
For	4000	days	-	133.76°
For	500	days	-	16.72°
For	60	days	-	2.01°
For	8	days	-	0.27°
For	0.10	days	-	0.003°
				461.553° (A)

Mean position of Saturn on 1-1-1900 = 236.74° (B)
Mean position on 8-4-67 (A+B) = 698.293°
Corr. to be applied (+) 5.067°
703.360°

Expunging the multiples of 360° the mean position of Saturn at birth is 343.360°.

Table (i) Mean Daily Motion of Sun (in degrees)

Mean position of Sun at the epoch
(At 0 Hours on 1-1-1900 76°E) 257.4568°

	Units	*Hundreds*	*Thousands*	*Ten thousands*
1.	0.9856	98.5602	265.6026	146.0265
2.	1.9712	197.1205	71.2053	272.0531
3.	2.9568	295.6808	76.8080	48.0796
4.	3.9524	34.2411	342.4106	184.1062
5.	4.9280	132.8013	248.0133	320.1327
6.	5.9136	231.3616	153.6159	96.1593
7.	6.8992	329.9218	59.2186	232.1868
8.	7.8848	68.4821	324.8212	8.2124
9.	8.8704	167.0424	230.4239	144.2389

Table (ii) Mean Daily Motion of Mars (in degrees)

Mean position at the epoch (At 0 Hours on 1-1-1900 76°E) 270.22°

	Units	*Tens*	*Hundreds*	*Thousands*	*Ten thousands*
1.	0.524	5.24	52.40	164.02	200.19
2.	1.048	10.48	104.80	328.04	40.39
3.	1.572	15.72	157.21	132.06	240.58
4.	2.096	20.96	209.61	296.08	80.78
5.	2.620	26.20	262.01	100.10	280.97
6.	3.144	31.44	314.41	264.12	121.16
7.	3.668	36.68	6.81	68.14	321.36
8.	4.192	41.92	59.22	232.55	161.55
9.	4.716	47.16	111.62	36.17	1.74

Table (iii) Mean Daily Motion of Jupiter (in degrees)

Mean position of Jupiter at the epoch
(At 0 Hours on 1-1-1900 76°E) 220.04°. Less Corr. 3.33° + 0.0067t

	Units	*Tens*	*Hundreds*	*Thousands*	*Ten thousands*
1.	.08	0.83	8.31	83.1	110.96
2.	.17	1.66	16.62	166.19	221.96
3.	.25	2.49	24.93	249.29	332.89
4.	.33	3.32	33.24	332.39	83.85
5.	.41	4.15	41.55	55.48	194.82
6.	.50	4.99	42.86	138.58	305.78
7.	.58	5.82	58.17	221.67	56.74
8.	.66	6.65	66.58	304.77	167.71
9.	.75	7.48	74.79	78.87	278.67

Table (iv) Mean Daily Motion of Saturn (in degrees)

Mean position of Saturn at the epoch
(At 0 Hours on 1-1-1900 76°E) 236.74°. Add Corr. 5° + 0.001t

	Units	*Tens*	*Hundreds*	*Thousands*	*Ten thousands*
1.	.03	.33	3.34	33.44	334.39
2.	.07	.67	6.69	66.88	308.79
3.	.10	1.00	10.03	100.32	283.18
4.	.13	1.34	13.38	133.76	257.57
5.	.17	1.67	16.72	167.20	231.97
6.	.20	2.01	20.06	200.64	206.36
7.	.23	2.34	23.41	234.08	180.75
8.	.27	2.68	26.75	267.51	152.14
9.	.30	3.01	30.10	300.95	122.54

Sheegrochha Position of Planets

Sheegrochha is the apogee of a planet. When planets come nearer to the sun they move faster to cover equal distance in equal time. Sheegrochha of superior planets, Mars, Jupiter and Saturn is the same as the mean position of Sun. Tables v and vi give the Sheegrochha positions of Mercury and Venus in Units of thousands, hundred, tens, etc.

Sheegrochha Positions of Mars, Jupiter & Saturn are 351.8412°.

Sheegrochha position of Mercury from Table v

Total No. of days 24568.10 A correction of 6.67- 0.00133t is to be added to the total longitude.

6.67-0.00133 x 67 = 6.5809°

For	20000 days	-	126.36°
For	4000 days	-	169.27°
For	500 days	-	246.16°
For	60 days	-	245.54°
For	8 days	-	32.74°
For	0.10 days	-	0.409°
			820.479°
Sheegrochha posn. at the epoch 1-1-1900=			164.0
			984.479°
Corr. factor		(+)	6.5809°
			991.0599°
Expunging the multiples of 360°		(-)	720
Sheegrochha of Mercury		=	271.0599°

Sheegrochha position of Venus from Table vi

Total No of days 24568.10 Factor to be deducted is 5° + 0.001t i.e. 5° + 0.001 x 67 = 5.067°

For	20000 days	-	2.93°
For	4000 days	-	288.52°
For	500 days	-	81.07°
For	60 days	-	96.13°
For	8 days	-	12.82°
For	0.10 days	-	0.16°
			481.63°
Sheegrochha posn. at the epoch 1-1-1900 =			328.51°
			810.14°

Corr. factor	(-)	5.067°
		805.073°
Expunging the multiples 360°	(-)	720
Sheegrochha Positions of Venus	=	85.073°

Table (v) Sheegrochha of Mercury

(At 0 Hours on 1-1-1900 76°E) Sheegrochha of Mercury 164° Mean position of Mercury is equal to that of Sun. Aphelion 220.05° Add Correction (6.67° - 0.00133t)

	Units	*Tens*	*Hundreds*	*Thousands*	*Ten thousands*
1.	4.09	40.92	49.23	133.32	243.18
2.	8.18	81.84	98.46	264.64	126.36
3.	12.28	122.77	147.69	36.95	9.54
4.	16.37	163.69	196.93	169.27	252.72
5.	20.46	204.62	246.16	301.59	135.90
6.	24.55	245.54	295.39	73.91	19.08
7.	28.65	286.46	344.62	206.34	262.26
8.	32.74	327.38	33.85	338.50	145.44
9.	36.83	8.31	83.09	110.86	28.63

Table (vi) Sheegrochha of Venus

(At 0 Hours on 1-1-1900 76°E) Sheegrochha of Venus 328.51° Mean position of Venus is equal to that of Sun. Aphelion 79.9° Less Correction (5° + 0.001t)

	Units	*Tens*	*Hundreds*	*Thousands*	*Ten thousands*
1.	1.60	16.02	160.21	162.15	181.46
2.	3.20	32.04	320.43	324.29	2.93
3.	4.81	48.06	120.64	246.44	184.39
4.	6.41	64.09	280.86	288.52	5.86
5.	8.01	80.11	81.07	90.73	187.32
6.	9.61	96.13	241.29	252.88	8.87
7.	11.21	116.15	41.50	55.02	190.25
8.	12.82	128.17	201.72	217.17	11.71
9.	14.42	144.19	1.93	19.32	193.18

Sheeghrochha of Planets Table XVI

Planet	*Nir. Long.*	*Mean Long.*	*Sheegrochha*
Mars	184.066°	184.382°	351.8412°
Mer	327.3°	351.8412°	271.0599°
Jup	91.5166°	97.8191°	351.8412°
Ven	28.833°	351.8412°	85.073°
Sat	340.933°	343.360°	351.8412°

Chesta kendra can be calculated by applying the formula :

$$\text{Chesta kendra} = \text{Sheegrochha} - \frac{(\text{Mean Long.} + \text{True Long})}{2}$$

Planet			*Calculation*		*Chesta kendra*
Mars	=	351.8412	- $\frac{(184.382 + 184.066)}{2}$	=	167.6172
Mer	=	271.0599	- $\frac{(351.8412 + 327.3)}{2}$	=	68.5107
Jup	=	351.8412	- $\frac{(97.8191 + 91.5166)}{2}$	=	257.1734 or 102.8266 *
Ven	=	85.073	- $\frac{(351.8412 + 28.833)}{2}$	=	254.736 or 105.264 *
Sat	=	351.8412	- $\frac{(343.360 + 340.933)}{2}$	=	9.6947

* If chesta kendra is more than 180°, subtract from 360° to get the net value.

Chesta bala

The maximum chesta bala is 60 shastiamsa. When chesta kendra is 0, chesta bala is also 0.

Mars	167.6172 ÷ 3	=	55.87 Sh.
Mer	68.5107 ÷ 3	=	22.84 Sh.
Jup	102.8266 ÷ 3	=	34.27 Sh.
Ven	105.2640 ÷ 3	=	35.09 Sh.
Sat	9.6947 ÷ 3	=	3.23 Sh.

Chesta bala of Sun $\frac{\text{Sayana Long.} + 90°}{3} = \frac{467°21'}{3}$

If it is more than 180° subtract it from 360°

107°21' ÷ 3 = 35.78 sh.

Chesta bala of Moon

$$\frac{\text{Nir. Long. of Moon - Nir. Long. of Sun}}{3}$$

(331°49' - 353°57') ÷ 3 = 7.377 sh.

5. Naisargika bala - Natural strength

Each planet possesses a natural strength and the value of strength depends on its luminosity. Sun, the brightest of all planets has the greatest strength. While Saturn has the least.

The following are the Naisargika bala of each planet. This value is fixed and is the same for every horoscope.

Sun	—	60 - (60 × 0/7)	=	60.00 sh.
Moon	—	60 - (60 × 1/7)	=	51.43 sh.
Ven	—	60 - (60 × 2/7)	=	42.86 sh.
Jup	—	60 - (60 × 3/7)	=	34.28 sh.
Mer	—	60 - (60 × 4/7)	=	25.72 sh.
Mars	—	60 - (60 × 5/7)	=	17.14 sh.
Sat	—	60 - (60 × 6/7)	=	8.57 sh.

6. Drishti bala or Drig bala - Aspectual strength

Every planet fully aspects the 7th house from where it is posited. Superior planets, Mars, Jupiter and Saturn have special aspects also. A planet cannot aspect within 30° and beyond 300°.

Drishti kendra or Aspect angle between the planets commences from 30° and ends at 300°.

Drishti kendra = Long. of Aspected body minus Long. of Aspecting body.

When the drishti kendra of a planet is 60° it gets a strength of 15 shastiamsa. It increases to 45 shashtiamsa when the value of drishti kendra is 90°. From 90° it decreases to 30 sh. at 120° and the value is 'nil' or O sh. at 150°. From 150° to 180° it increases suddenly and attains a maximum value of 60 shashtiamsa at 180° (the full aspect). Again the value decreases gradually till it reaches 300°, where it has 0 sh. bala.

If the longitude of the aspecting planet is more than the longitude of aspected planet, add 360° to the longitude of aspected planet and then subtract.

Drishti kendra of Planets - Table XVII

Aspecting pln. (long.) \ *Aspected pln. (long.)*	*Sun 353°57'*	*Moon 331°49'*	*Mars 184°04'*	*Mer 327°18'*	*Jup 91°31'*	*Ven 28°50'*	*Sat 340°56'*
Sun 353°57'	–	337°52'	190°07'	333°21'	97°34'	34°53'	346°59'
Moon 331°49'	22°08'	–	212°15'	355°29'	119°42'	57°01'	9°07'
Mars 184°04'	169°53'	147°45'	–	143°12'	267°27'	204°46'	156°52'
Mer 327°18'	26°39'	4°31'	216°46'	–	124°13'	61°32'	13°38'
Jup 91°31'	262°26'	240°18'	92°33'	235°47'	–	297°19'	249°25'
Ven 28°50'	325°07'	302°59'	155°14'	298°28'	62°41'	–	312°06'
Sat 340°56'	13°01'	350°53'	203°08'	346°22'	110°35'	47°54'	–

Drishti value

Drishti value can be calucuted thus. If the drishti kendra is between -

180°	to	300°	(300° - DK)	÷ 2
150°	to	180°	(DK - 150°)	× 2
120°	to	150°	(150° - DK)	
90°	to	120°	(120° - DK)	÷ 2 + 30°
60°	to	90°	(DK - 60°)	+ 15°
30°	to	60°	(DK - 30°)	÷ 2

Calculation of Drishti value - Table XVIII

Planet	*Sun*	*Moon*	*Mars*	*Mer*	*Jup*	*Ven*	*Sat*
Sun	–	–	54.94	–	41.22	2.44	–
Moon	–	–	43.87	–	30.15	13.51	–
Mars	39.77	2.25	–	6.80	16.27	47.61	13.73
Mer	–	–	41.61	–	25.78	16.53	–
Jup	18.78	29.85	43.72	32.11	–	1.34	25.29
Ven	–	–	10.47	0.77	17.68	–	–
Sat	–	–	48.43	–	34.71	8.95	–

Special aspect or vishesha drishti

Some planets like Mars, Jupiter and Saturn have special aspects in addition to their usual aspect. Saturn has special aspect on the 3rd (60°-90°) and 10th (270°-300°) house. Jupiter has special aspect on 5th (120°-150°) and 9th (240°-270°) house and Mars has special aspect on the 4th (90°-120°) and 8th (210°-240°).

The special aspect value of Saturn is 45 sh., that of Jupiter is 30 sh. and that of Mars is 15 sh. After finding the ordinary drishti values and the special drishti value of all the planets, the special drishti value in case of Mars, Jupiter and Saturn has to be added if they have any special aspect in the horoscope i.e. if the drishti value falls in the range of special drishtis.

Shubha and Papa drishti

The aspects by a benefic planet is shubha drishti or positive aspect and the aspect by a malefic is ashubha drishti or negative aspect. Benefic planets (shubha grahas) are Jupiter, Venus, waxing Moon and well associated Mercury. Malefic planets (papa grahas) are Sun, Mars, Saturn, waning Moon and badly associated Mercury.

The sum total of the drishti values of all the planets is called Drishti Pinda. This is positive depending on the drishti of the malefics or benefics being greater.

Drishti pinda (papa drishti) - Table XIX

Planet	*Sun*	*Moon*	*Mars*	*Mer*	*Jup*	*Ven*	*Sat*
Sun	-	-	54.94	-	41.22	2.44	-
Moon	-	-	43.87	-	30.15	13.51	-
Mars	39.77	2.25	-	6.80	16.27	47.61	13.73
Sat	-	-	48.43	-	34.71	8.95	-
Total	-39.77	-2.25	-147.24	-6.80	-122.35	-72.51	-13.73

Since it is a waning Moon, in the Example chart, it becomes a malefic. Mars and Saturn do not aspect any planet by their special aspect.

Drishti pinda (shubha drishti) - Table XX

Planet	*Sun*	*Moon*	*Mars*	*Mer*	*Jup*	*Ven*	*Sat*
Mer	-	-	41.61	-	25.78	16.53	-
Jup	48.78*	59.85*	43.72	32.11	-	1.34	55.29*
Ven	-	-	10.47	0.77	17.68	-	-
Total	48.78	59.85	95.80	32.88	43.46	17.87	55.29

* Jupiter aspects (9th aspect) Sun, Moon and Saturn in the example chart, hence the special aspect value of 30 sh. has been added to it.

Net aspect of Planets (drishti pinda) - Table XXI

Planet	*Sun*	*Moon*	*Mars*	*Mer*	*Jup*	*Ven*	*Sat*
Papa	-39.77	-2.25	-147.24	-6.80	-122.35	-72.51	-13.73
Shubha	+48.78	+59.85	+95.80	+32.88	+43.46	+17.87	+55.29
Net Total	+9.01	+57.60	-51.44	+26.08	-78.89	-54.64	+41.56

Drishti or Drig bala

Drishti bala is one-fourth of drishti pinda. It is positive or negative depending on whether the drig pinda is positive or negative.

Drishti bala - Table XXII

Planet	*Drishti Pinda*			*Drishti Bala*
Sun	+ 9.01	÷ 4	=	+ 2.25
Moon	+ 57.60	÷ 4	=	+ 14.40
Mars	- 51.44	÷ 4	=	- 12.86
Mer	+ 26.08	÷ 4	=	+ 6.52
Jup	- 78.89	÷ 4	=	- 19.72
Ven	- 54.64	÷ 4	=	- 13.66
Sat	+ 41.56	÷ 4	=	+ 10.39

Shadbala Pinda

The sum total of Sthana bala, Dig bala, Kaala bala, Chesta bala, Naisargika bala and Drishti bala is Shadbala Pinda. Drishti bala is added or subtracted depending on it being positive or negative. The total balas divided by 60 gives the shadbala in rupas.

Shadbala Pinda - Table XXIII

Bala	Sun	Moon	Mars	Mer	Jup	Ven	Sat
Sthana bala	142.775	193.35	220.77	189.65	182.59	240.64	114.27
Dig bala	13.04	39.58	50.03	47.92	6.52	58.59	16.62
Kaala bala	231.83	95.21	177.27	102.04	136.14	72.54	188.54
Chesta bala	35.78	7.377	55.87	22.84	34.27	35.09	3.23
Naisargika bala	60.00	51.43	17.14	25.72	34.28	42.86	8.57
Drishti bala	+2.25	+14.40	-12.86	+6.52	-19.72	-13.66	+10.39
Total	485.675	401.347	508.22	394.69	374.08	436.06	341.62
In Rupas	8.095	6.689	8.470	6.578	6.234	7.267	5.694

Shadbala

Every planet has a minimum requirement of shadbala pinda at which he becomes strong. Hence the relative strength of the planets can be found out thus :

Power of Planets - Table XXIV

Planet	*Shadbala pinda*		*Minimum Requirement*	*Relative Strength*	*Rank*
Sun	8.095	÷	5.0	1.619	II
Moon	6.689	÷	6.0	1.115	V
Mars	8.470	÷	5.0	1.694	I
Mer	6.578	÷	7.0	0.939	VII
Jup	6.234	÷	6.5	0.959	VI
Ven	7.267	÷	5.5	1.321	III
Sat	5.694	÷	5.0	1.139	IV

In the example horoscope, Mars is strongest followed by Sun, Venus, Saturn, Moon, Jupiter and Mercury, which is the weakest. Among the different planets associated with the different bhavas, the one which is strong or has the greatest shadbala will influence the bhava most.

Ishta and Kashta Phalas

Ishta and kashta phalas help us to evaluate the extent of good (Ishta) or bad (Kashta) that is likely to happen in the the dasha or antardasha of planets or lords of any bhava. A planet with more Ishta phala is always supposed to be inclined to do good in its dasha or antardasha while a planet with more kashta phala might give rise to evil result.

Ishta phala = $\sqrt{\text{Oochha bala} \times \text{Chesta bala.}}$

Kashta phala = 60 - Ishta phala

Planet	*Oocha Bala*	*Chesta Bala*	*Ishta Phala*	*Kashta Phala*
Sun	54.65	35.78	44.22	15.78
Moon	39.60	7.38	17.09	42.91
Mars	22.02	55.87	35.07	24.93
Mer	5.90	22.84	11.61	48.39
Jup	58.84	34.27	44.90	15.10
Ven	49.39	35.09	41.63	18.37
Sat	13.02	3.23	6.48	53.52

CHAPTER XVIII

BHAVA BALA

"Whatever is sacrificed, given or performed and whatever austerity is practised without 'shraddha', it is called 'asat'. It is of no use here or hereafter."

–Bhagwad Gita XVII. 28

Strength of a bhava or a house is called bhava bala. There are 12 bhavas and the strength of a bhava is composed of :

1. **Bhavadhipati bala**
2. **Bhava Digbala**
3. **Bhava Drishti bala**

Bhavadhipati bala

This is the strength of the lord of a bhava or planet in whose rashi or sign the bhava madhya falls. Shadbala pinda of the planet owning the bhava constitutes its bhavadhipati bala.

Bhavadhipati bala - Table XXVI

Bhava	*Sign*	*Lord*	*Graha Bala*	*Bhava*	*Sign*	*Lord*	*Graha Bala*
I	Capricorn	Sat	341.62	VII	Cancer	Moon	391.35
II	Aquarius	Sat	341.62	VIII	Leo	Sun	485.68
III	Pisces	Jup	374.08	IX	Virgo	Mer	394.69
IV	Taurus	Ven	436.06	X	Scorpio	Mars	508.22
V	Taurus	Ven	436.06	XI	Scorpio	Mars	508.22
VI	Gemini	Mer	394.69	XII	Sagittarius	Jup	374.08

Bhava Dig bala

This is the strength acquired by the bhavas falling at the midpoint (bhava madhya) in different groups of rashis or signs. Rashis have been grouped into nara rashi (human signs); jalachara rashi (aquatic signs); chatushapad rashi (quadruped signs) and keeta rashi (insect signs).

Nara rashis are Gemini, Virgo, Aquarius, Libra and the first half (0° to 15°) of Sagittarius. If the mid point of the ascendant falls in any of these signs, the ascendant acquires strength of 1 rupa. If the mid-point of 7th bhava falls in nara rashi, it loses strength.

Jalachara rashis are Cancer, Pisces, and second half (15°-30°) of Capricorn. If the 4th bhava happens to fall in jalachara rashi it gets a strength of 1 rupa. When a sign belonging to this rashi becomes the 10th bhava it loses strength.

Chatushpad rashis are Aries, Taurus, Leo Second half (15°-30°) of Sagittarius and the first half (0°-15°) of Capricorn. When a chatushpad rashi becomes the bhava madhya of 10th bhava, it becomes powerful and gets 1 rupa strength; and the mid point of the 4th bhava in this rashi loses strength.

Keeta Rashis is Scorpio and it is the only keeta rashi in the zodiac. If the seventh bhava falls in the keeta rashi, then it acquires 1 rupa strength. Hence the bhava madhya of ascendant in a keeta rashi loses strength or becomes powerless.

Bhava digbala (in sh.) = No. of the powerless bhava minus No. of the bhava × 10.

If the difference is more than 6, subtract from 12 and multiply by 10, since 60 sh. is the maximum strength a bhava can acquire.

Bhava digbala - Table XXVII

Bhava	*Rasi*	*Type*	*Calculation*			
I	Capricorn (2)	Jalachara	10-1	or	3×10	= 30 sh.
II	Aquarius	Nara	7-2	or	5×10	= 50 sh.
III	Pisces	Jalachara	10-3	or	5×10	= 50 sh.
IV	Taurus	Chatushpad	4-4	or	0	= 00 sh.
V	Taurus	Chatushpad	4-5	or	1×10	= 10 sh.
VI	Gemini	Nara	7-6	or	1×10	= 10 sh.
VII	Cancer	Jalachara	10-7	or	3×10	= 30 sh.
VIII	Leo	Chatushpad	4-8	or	4×10	= 40 sh.
IX	Virgo	Nara	7-9	or	2×10	= 20 sh.
X	Scorpio	Keeta	1-10	or	3×10	= 30 sh.
XI	Scorpio	Keeta	1-11	or	2×10	= 20 sh.
XII	Sagittarius	Chatushpad	4-12	or	4×10	= 40 sh.

Bhava Drishti bala

Each bhava in a horoscope is aspected by a planet and its aspect becomes positive or negative depending upon the planet being a benefic or a malefic. To determine the exact amount of drishti on bhava, drishti kendra is found out.

Calculate the drishti values by applying formulas. Add special drishti values for Mars, Jupiter and Saturn, if any. Take the drishti values of Jupiter and Mercury as they are but take one-fourth of the drishti values of all other planets over the bhava madhya. Then the sum total of aspect value of all malefics (Sun, Mars, Saturn, waning Moon) is determined, which will be negative (papa or ashubha drishti). Similarly the total aspect value of all the benefics (Jupiter, Venus, Mercury and waxing Moon) shubha drishti, is also found out. Algebric addition of the malefic and benefic values gives the net drishti value of planets over the bhavas. Bhava drishti bala will be negative or positive accordingly.

Drishti Kendra of all bhavas - XXVIII

Planet Long.	*Bhava I 291°04'*	*Bhava II 325°05'*	*Bhava III 359°04'*	*Bhava IV 33°04'*	*Bhava V 59°04'*	*Bhava VI 85°04'*	*Bhava VII 111°04'*	*Bhava VIII 145°04'*	*Bhava IX 179°04'*	*Bhava X 213°04'*	*Bhava XI 239°04'*	*Bhava XII 265°04'*
Sun 353°57'	297°07'	331°08'	5°07'	39°07'	65°07'	91°07'	117°07'	151°07'	185°07'	219°07'	245°07'	271°07'
Moon 331°49	319°15'	353°16'	27°15'	61°15'	87°15'	113°15'	139°15'	173°15'	207°15'	241°15'	267°15'	293°15'
Mars 184°04'	107°00'	141°01'	175°01'	209°00'	235°00'	261°00'	287°00'	321°00'	355°00'	29°00'	55°00'	81°00'
Mer 327°18'	323°46'	357°47'	31°46'	65°46'	91°46'	117°46'	143°46'	177°46'	211°46'	245°46'	271°46'	297°46'
Jup 91°31'	199°33'	233°34'	267°33'	302°33'	327°33'	353°33'	19°33'	53°33'	87°33'	121°33'	147°33'	173°33'
Ven 28°50'	262°14'	296°15'	330°14'	4°14'	30°14'	56°14'	82°14'	116°14'	150°14'	184°14'	210°14'	236°14'
Sat 340°56'	310°08'	344°09'	18°08'	52°08'	78°08'	104°08'	130°08'	164°08'	198°08'	232°08'	258°08'	284°08'

Drishti Value of all bhavas $ - XXIX

Bhava Planet	*Bhava I*	*Bhava II*	*Bhava III*	*Bhava IV*	*Bhava V*	*Bhava VI*	*Bhava VII*	*Bhava VIII*	*Bhava IX*	*Bhava X*	*Bhava XI*	*Bhava XII*
Sun	1.44	-	-	4.56	20.02	46.11	32.27	2.23	57.44	40.44	27.44	14.44
Moon	-	-	-	16.25	42.25	33.37	10.75	46.50	46.37	29.37	16.37	3.37
Mars	36.50	9.00	50.00	45.50	32.50	19.50	6.50	-	-	-	12.50	36.00
	15.00 *				15.00 *							
Mer	-	-	0.88	20.76	46.77	31.11	6.23	55.53	44.12	27.12	14.12	1.12
Jup	50.22	33.21	16.22	-	-	-	-	11.77	42.55	28.55	2.45	47.10
			30.00 *								30.00 *	
Ven	18.88	1.88	-	-	0.12	13.11	37.23	31.88	0.47	57.95	44.88	31.88
Sat	-	-	-	11.06	33.13	37.93	19.87	28.26	50.93	33.93	20.93	7.93
					45.00 *							45.00 *

$ Values obtained after applying equations

* Values for special aspect for Jupiter, Mars and Saturn

Net Drishti Value (Papa Drishti) (-ve)* - XXX

Planet	*Bhava I*	*Bhava II*	*Bhava III*	*Bhava IV*	*Bhava V*	*Bhava VI*	*Bhava VII*	*Bhava VIII*	*Bhava IX*	*Bhava X*	*Bhava XI*	*Bhava XII*
Sun	0.36	-	-	1.14	5.00	11.52	8.06	0.56	14.36	10.11	6.86	3.61
Moon	-	-	-	4.06	10.56	8.34	2.69	11.62	11.59	7.34	4.09	0.84
Mars	12.87	2.25	12.50	11.37	11.87	4.87	1.62	-	-	-	3.12	9.00
Sat	-	-	-	2.76	19.53	9.48	4.96	7.06	12.73	8.48	5.23	13.23
Total (-)	13.23	2.25	12.50	19.33	46.96	34.21	17.33	19.24	38.68	25.93	19.30	26.68

Net Drishti Value (Shubha Drishti) (+ve)* - XXXI

Planet	*Bhava I*	*Bhava II*	*Bhava III*	*Bhava IV*	*Bhava V*	*Bhava VI*	*Bhava VII*	*Bhava VIII*	*Bhava IX*	*Bhava X*	*Bhava XI*	*Bhava XII*
Mer	-	-	0.88	20.76	46.77	31.11	6.23	55.53	44.12	27.12	14.12	1.12
Jup	50.22	32.72	46.22	-	-	-	-	11.76	42.55	28.55	32.45	47.10
Ven	4.72	0.47	-	-	0.03	3.27	9.31	7.97	0.11	14.49	11.22	7.97
Total (+)	54.94	33.19	47.10	20.76	46.80	34.38	15.54	75.26	86.78	70.16	57.79	56.19
Net bal.	+ 41.71	+ 30.94	+ 34.60	+ 1.43	- 0.16	+ 0.17	- 1.79	+ 56.02	+ 48.10	+ 44.23	+ 38.49	+ 29.51

* One-fourth of the drishti values have been taken for Sun, Moon, Mars, Venus, Saturn and full drishti values for Mercury and Jupiter.

Total Bhava Bala - XXXII

Bhava Bala	*Bhava I*	*Bhava II*	*Bhava III*	*Bhava IV*	*Bhava V*	*Bhava VI*	*Bhava VII*	*Bhava VIII*	*Bhava IX*	*Bhava X*	*Bhava XI*	*Bhava XII*
Bhavadhipati bala	341.62	341.62	374.08	436.06	436.06	394.69	391.35	485.68	394.66	508.22	508.22	374.08
Bhava Dig bala	30.00	50.00	50.00	-	10.00	10.00	30.00	40.00	20.00	30.00	20.00	40.00
Bhava Drishti bala	+ 41.71	+ 30.94	+ 34.60	+ 1.43	- 0.16	+ 0.17	- 1.79	+ 56.02	+ 48.10	+ 44.23	+ 38.49	+ 29.51
Total	413.33	422.56	458.68	437.49	445.90	404.86	419.56	581.70	462.76	582.45	566.71	443.59
In Rupas	6.889	7.043	7.645	7.291	7.432	6.747	6.992	9.695	7.713	9.708	9.445	7.393

The tenth bhava is the strongest in the example horoscope.

CHAPTER XIX

GRAHA BALA AND BHAVA BALA IN A NUTSHELL

"For the protection of the good, for the destruction of the wicked and for the establishment of dharma I am born age after age.

–Bhagwad Gita IV. 8

The concepts of Graha Bala and Bhava Bala explained in the previous two chapters are being given here in a very brief and capsule form for ready reference.

GRAHA BALA

1. Sthana bala

i) ***Oochha bala*** : Planets longitude (-) deep debilitation point. Difference ÷ 3 = Oochha bala.
Deep debilitation points 190, 213, 118, 345, 275, 177, 20.

ii) ***Saptavargiya bala*** : Rashi, Hora, Dreshkon, Saptamsha, Navamsha, Dwadashamsha, Trimshamsha.
Mooltrikon - 45, Own - 30, Very friendly 22.5, Friendly - 15, Neutral - 7.5, Enimical - 3.75 , Extreme enemy 1.875.
Total of these gives Saptvargiya bala.

iii) ***Oja-yugma bala*** : Venus and Moon in even rashi and navamsha - 15 sh. Others in odd rashi and navamsha - 15 sh.
Total gives oju-yugma rashi-amsha bala.

iv) ***Kendradi bala*** : Planets posited in kendra/panphara/apoklima get 60/30/15 sh. bala.

v) ***Dreshkon bala*** : 15 sh.
Male planets Sun, Jupiter, Mars in 1st dreshkon

Neutral planets Sat, Mercury in 2nd dreshkon
Female planets Moon, Venus in 3rd dreshkon

2. Dig bala

Planets longitude (-) powerless point ÷ 3 (If more than 180 then subtract from 360)

Powerless Sun, Mars - 4H, Jupiter, Mercury - 7H, Venus, Moon - 10H, Saturn - in Lagna.

Powerless points are bhava madhya longitudes of 4H, 7H, 10H, Lagna.

3. Kaala bala

i) ***Nat-unnat bala*** : Convert time of birth (midnight to midday or midday to midnight × degrees by (×15) ÷ 3
Sun, Jup, Ven are powerful - Midnight to midday
Moon, Mars, Sat are powerful - Midday to midnight
Depending upon time of birth these planets get this bala. Other planets get remainder from 60. Mercury is always powerful and gets 60 sh. bala.

ii) ***Paksha bala*** : Moon's long. (-) Sun's long. ÷ 3 = Paksha bala of shubha planets. Remaining after deducting from 60 is given to papa planets. Malefics powerful in dark half and benefics in bright half. Moon's paksha bala is doubled.

iii) ***Tribhag bala*** : Day ÷ 3, Night ÷ 3. Day is Sunrise to Sunset.
Lords of parts of day = 1st - Mer, 2nd - Sun, 3rd - Sat.
Lords of parts of night = 1st - Moon, 2nd - Ven, 3rd - Mars
Lord of the part in which birth takes place gets 60 sh., Jupiter gets 60 sh.

iv) **Abdha bala** : 15 sh. Ahargana ÷ 360 = Q × 3 + 1, ÷ 7.
Count remainder from Wednesday.

v) ***Masa bala*** : 30 sh. Ahargana ÷ 30 = Q × 2 + 1, ÷ 7.
Count remainder from Wednesday.

vi) ***Vara bala*** : 45 sh. Ahargana ÷ 7.
Count remainder from Wednesday.

vii) ***Hora bala*** : 60 sh. Sunrise to time of birth (Both either LMT or IST) or sunset to time of birth, divide by 12 to arrive at the hora in which birth takes place.

viii) ***Ayanabala*** : Pl. nir. long + ayanamsha = sayana long., Bhuja equiv., Declination +/-, N/S, Ayana bala

$$\text{Declination} = \frac{\text{Minutes (table)} \times \text{bhuja}}{\text{Degree (table)}}$$

$$\text{Ayana bala} = \frac{24 \pm \text{Decl.}}{48} \times 60$$

Part	*Degrees*	*Value of the part*	*Value upto the part*
I	0-15°	362'	362'
II	15°-30°	341'	703'
III	30°-45°	299'	1002'
IV	45°-60°	236'	1238'
V	60°-75°	150'	1388'
VI	75°-90°	52'	1440'

Ven, Sun, Mars, Jup (+) in north, (-) in south Moon, Sat (+) in south, (-) in north Mercury always powerful, Sun's ayana bala is doubled.

ix) ***Yudha bala*** : Within 1°, Planet with lesser longitude wins. Find Sthana bala and Dig bala (upto ayana bala), Total ± diff. Diff ÷ diff of bimba parimaan of planets in war. Q (yudha bala) is added to victorious planet and subtracted from vanquished planet.

Bimba parimaan = Mars 9.4", Mer 6.6", Jup 190.4", Ven 16.6", Sat 158"

4. Chesta bala

Find number of days from 1-1-1900. Calculate mean long. Planet, Mean long., True long., Sheegrochh, Chesta kendra (CK), Red. CK ÷ 3 = CB

$$\text{CK} = \text{Sheegrochh} - \frac{\text{Mean} + \text{True}}{2}$$ If (-) then reduce from 360

Reduced Chesta Kendra = 360 (-) CK (If CK is more than 180, otherwise same)

Sun's mean long. is the mean long. of Ven and Mer and sheegrochh of Mars, Jup, Sat.

Sun's Chesta bala (-) sayana long. of Sun + 90° = CK

Reduced Chesta Kendra = 360 (-) CK (If CK is more than 180, otherwise same)

Reduced Chesta Kendra ÷ 3 = Sun's Chesta bala

Moon's Chesta bala = Moon's nirayana long. (-) Sun's nirayana longitude = Chesta Kendra

Reduced Chesta Kendra = 360 (-) CK (If CK is more than 180, otherwise same)

Reduced Chesta Kendra ÷ 3 = Chesta bala

5. Naisargika bala

60, 51.43, 17.14, 25.70, 34.28, 42.85, 8.57

6. Drishti bala

Aspected (-) Aspecting = Drishti kendra (DK). Drishti pinda

180°	to	300°	(300° - DK)	÷ 2
150°	to	180°	(DK - 150°)	× 2
120°	to	150°	(150° - DK)	
90°	to	120°	(120° - DK)	÷ 2 + 30°
60°	to	90°	(DK - 60°)	+ 15°
30°	to	60°	(DK - 30°)	÷ 2

Drishti pinda ÷ 4 = Drishti bala (Shubha +, Ashubha -, Nett.)

Vishesh drishti of Sat, Jup, Mars (House to house) - 45, 30, 15 sh. respectively. As per Brihat Parashara Hora Shastra,

Sat 45 sh. (60 - 90 and 270 - 300)

Jup 30 sh. (120 - 150 and 240 - 270)

Mars 15 sh. (90 - 120 and 210 - 240)

Shadbala

Total of the above 6 bala gives shadbala. Shadbala pinda ÷ 60 gives shadbala in rupa. Minimum required 5, 6, 5, 7, 6.5, 5.5, 5. Divide shadbala pinda in rupas by these to find ratios and ranks for the graha bala.

Ishta and Kashta phalas

Sun's chesta bala = Sayana long. + 90° = CK

Red. chesta kendra 360 (-) CK (If CK more than 180, otherwise same)

CK ÷ 3 = Chesta bala

Ishta phala = $\sqrt{\text{Oochha bala} \times \text{Chesta bala.}}$

Kashta phala = 60 - Ishta phala

BHAVA BALA

1. Bhavadhipati bala

Shadbala of the lords of bhavas is the bhavadhipati bala. Take in shashtiamshas.

2. Bhava Dig bala

Nara rashis 3, 6, 7, 1st half of 9, 11	In 7H = 0
Jalachara rashis 4, 2nd half of 10, 12	In 10H = 0
Chatushpad rashis 1, 2, 5, 2nd half of 9 and 1st half of 10	In 4H = 0
Keeta rashis 8	In Lagna = 0

Bhava, Bhava madhya in rashi, Weakest point, (-) Bhava madhya in bhava, If more than6 then reduce from 12, multiply by 10 to get bhava drishti bala in shashtiamsha.

3. Bhava Drishti bala

Bhava madhyas of 12 bhavas.

Aspected body (-) aspecting body = Drishti kendra

Drishti pinda and drishti bala is same as per graha drishti bala.

Bhava bala

The total of these three gives bhava bala.

Index

NOTES

NOTES

ॐश्री गणेशाय नमः॥ ॐश्री मंगलमूर्तये नमः॥ ॐश्री सरस्वत्यै नमः॥ ॐश्री गणेशाय नमः॥ ॐश्री मंगलमूर्तये नमः॥ ॐश्री सरस्वत्यै नमः॥

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- K N Rao

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